DOCUMENT RESUME

ED 144 996 TM 006 575

AUTHOR	Fletcher, John; Ree, Malcolm James
TITLE	Armed Services Vocational Aptitude Battery (ASVAB) Correlational Analysis, ASVAB Form 2 Versus ASVAB Form 5. Final Report September 1975-August 1976.
INSTITUTION	Air Force Human Resources Lab., Brooks AFB, Texas.
SPONS AGENCY	Air Force Human Resources Lab., Lackland AFB, Tex. Personnel Research Div.
REPORT NO	AFHRL-TR-76-70
PUB DATE	Oct 76
CONTRACT	F41609-76-C-0006
NOTE	145p.; Several tables may be marginally legible due to print quality
AVAILABLE FROM	National Technical Information Service, Springfield, Virginia 22161
EDRS PRICE	MF-$0.83 HC-$7.35 Plus Postage.
DESCRIPTORS	*Aptitude Tests; *Correlation; *Equated Scores; Factor Analysis; High School Students; Military Organizations; *Norms; Research Methodology; Secondary Education; Statistical Analysis; Tables (Data); *Test Construction; Test Reliability; Test Validity; *Vocational Aptitude
IDENTIFIERS	*Armed Services Vocational Aptitude Battery

ABSTRACT

The selection of an appropriate test battery is based on its content and applicability to the vocational trainee population. This report describes the testing of a national sample of U.S. high school students with an established version of Armed Services Vocational Aptitude Battery (ASVAB), and a new, enlarged version of the same test battery. Correlation matrices and conversion tables were generated by equating components of the old form of the test with scales and components in the new version. The research methodology and findings were described, compared, and contrasted to the two test measures. Correlation and factor analyses were executed which showed four component factors. These are described and used to identify the vocational aptitude contents of the two tests. (Author/DSE)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

AFHRL-TR-76-70

AIR FORCE

HUMAN RESOURCES

LABORATORY

SCOPE OF INTEREST NOTICE
The ERIC Facility has assigned this document for processing to: TM CE
In our judgement, this document is also of interest to the clearinghouses noted to the right. Indexing should reflect their special points of view.

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

TM006 575 ED144996

ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB) CORRELATIONAL ANALYSIS, ASVAB FORM 2 VERSUS ASVAB FORM 5

By

John Fletcher
Rothe Developments, Incorporated
4614 Sinclair Road
San Antonio, Texas 78222

Malcolm J. Ree

PERSONNEL RESEARCH DIVISION
Lackland Air Force Base, Texas 78236

October 1976
Final Report for Period September 1975 – August 1976

Approved for public release; distribution unlimited.

AIR FORCE SYSTEMS COMMAND
BROOKS AIR FORCE BASE, TEXAS 78235

NOTICE

When US Government drawings, specifications, or other data are used for any purpose other than a definitely related Government procurement operation, the Government thereby incurs no responsibility nor any obligation whatsoever, and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise, as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

This final report was submitted by Rothe Developments, Incorporated, 4614 Sinclair Road, San Antonio, Texas 78222, under contract F41609-76-C-0006, project 7719, with Personnel Research Division, Air Force Human Resources Laboratory (AFSC), Lackland Air Force Base, Texas 78236. Dr. Malcolm J. Ree, Selection and Classification Systems Branch, was the contract monitor.

This report has been reviewed and cleared for open publication and/or public release by the appropriate Office of Information (OI) in accordance with AFR 190-17 and DoDD 5230.9. There is no objection to unlimited distribution of this report to the public at large, or by DDC to the National Technical Information Service (NTIS).

This technical report has been reviewed and is approved.

TYREE H. NEWTON, Colonel, USAF
Chief, Personnel Research Division

Approved for publication.

DAN D. FULGHAM, Colonel, USAF
Commander

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: AFHRL-TR-76-70
2. GOVT ACCESSION NO.:
3. RECIPIENT'S CATALOG NUMBER:

4. TITLE (and Subtitle): ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB) CORRELATIONAL ANALYSIS, ASVAB FORM 2 VERSUS ASVAB FORM 5

5. TYPE OF REPORT & PERIOD COVERED: Final, September 1975 – August 1976

6. PERFORMING ORG. REPORT NUMBER:

7. AUTHOR(s): John Fletcher, Malcolm J. Ree

8. CONTRACT OR GRANT NUMBER(s): F41609-76-C-0006

9. PERFORMING ORGANIZATION NAME AND ADDRESS: Rothe Developments, Inc., 4614 Sinclair Road, San Antonio, Texas 78222

10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS: 62703F, 77191013

11. CONTROLLING OFFICE NAME AND ADDRESS: HQ Air Force Human Resources Laboratory (AFSC), Brooks Air Force Base, Texas 78235

12. REPORT DATE: October 1976

13. NUMBER OF PAGES: 120

14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office): Personnel Research Division, Air Force Human Resources Laboratory, Lackland Air Force Base, Texas 78236

15. SECURITY CLASS. (of this report): Unclassified

15a. DECLASSIFICATION/DOWNGRADING SCHEDULE:

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

test construction
test equating
factor analysis
aptitude testing

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

A total of 2,052 U.S. high school boys and girls, selected from 10 geographical regions, were tested on consecutive half-days using the Armed Services Vocational Aptitude Battery (ASVAB) Form 2 and ASVAB Form 5 vocational aptitude test batteries. Effects of fatigue, training, environmental factors, and proctorial variation were minimized by experimental design. An extensive program of optical scanning, computer analysis, inter-test comparisons, correlation matrix generation, factor analysis and equipercentile calculations was conducted. Three new tests in the larger battery (ASVAB Form 5) were vocationally oriented as opposed to scholastically oriented. Seven tests common to both batteries had reliability coefficients of 0.56 to 0.76. A new factor in vocational testing, tentatively described as "attention to explicit rules," was identified.

PREFACE

This report was submitted by Rothe Development, Incorporated, San Antonio, Texas under contract F41609-76-C-0006, work unit 77191013, and executed by St. Mary's University Research Center, San Antonio. Mr. W. E. Rothe was project manager. Dr. John Fletcher was principal investigator and project director. Dr. Tom Mote directed the computer analysis program, assisted by Mr. Neil Kammer and personnel of the University Computing Center (Director: Mr. Terry Vetters). The work was accomplished between September 1975 and May 1976.

The author expresses thanks to personnel of the Personnel Research Division, Air Force Human Resources Laboratory, Lackland AFB, Texas, and Armed Forces Vocational Testing Group, Randolph AFB, Texas, for providing technical information and logistical assistance, and for making available the test booklets for use in schools. Grateful recognition is extended to members and faculty of St. Mary's University Graduate School and the 28 public and private high schools (listed in Appendix C) for their professional participation in the nationwide testing program. The national sampling plan was executed by Dr. James Ritter. University Research Center activities were directed and co-ordinated by Dr. George A. Benz.

TABLE OF CONTENTS

Page

Preface 1

Table of Contents 2

I. Introduction 9

II. Method 10
High School Sample 10
Consecutive Half-day Testing 13

III. Results 14
Descriptive Scoring Statistics 14
Form 2 Versus Form 5 Correlation Analysis 14
Factor Analysis 16
Equipercentile Tables 16

IV. Interpretation and Discussion 19
ASVAB Forms 1, 2 and 5 19
Reliability 19
Validity 21

V. Conclusions 22

References 23

APPENDICES

Appendix

A Equipercentile Conversion Tables for Subtests AR, EI, SP, AI, MC, SI and WK 26

B Equipercentile Conversion Tables for Composites EL, GMC, CL, GT and MM 76

C Participating U.S. High Schools 112

D Short Description of Tests 114

LIST OF ILLUSTRATIONS

Figure

1 Map Showing Nationwide Distribution of Participating High Schools and Grade 10-12 Students 12

LIST OF TABLES

Table		Page
1	Administration and Contents of Vocational Tests.	11
2	Descriptive Test Score Statistics.	15
3	Matrix of Inter-Test Correlations.	20
4	Results of Factor Analysis: Factor Loadings for 21 Tests	17
A1	Arithmetic Reasoning: Equipercentiles for Forms 2 and 5 - Grade 10 Males	27
A2	Arithmetic Reasoning: Equipercentiles for Forms 2 and 5 - Grade 10 Females	28
A3	Arithmetic Reasoning: Equipercentiles for Forms 2 and 5 - Grade 11 Males	29
A4	Arithmetic Reasoning: Equipercentiles for Forms 2 and 5 - Grade 11 Females	30
A5	Arithmetic Reasoning: Equipercentiles for Forms 2 and 5 - Grade 12 Males	31
A6	Arithmetic Reasoning: Equipercentiles for Forms 2 and 5 - Grade 12 Females	32
A7	Arithmetic Reasoning: Equipercentiles for Forms 2 and 5 - Grades 10-12, Both Sexes	33
A8	Electronics Information: Equipercentiles for Forms 2 and 5 - Grade 10 Males	34
A9	Electronics Information: Equipercentiles for Forms 2 and 5 - Grade 10 Females	35
A10	Electronics Information: Equipercentiles for Forms 2 and 5 - Grade 11 Males	36
A11	Electronics Information: Equipercentiles for Forms 2 and 5 - Grade 11 Females	37
A12	Electronics Information: Equipercentiles for Forms 2 and 5 - Grade 12 Males	38
A13	Electronics Information: Equipercentiles for Forms 2 and 5 - Grade 12 Females	39

LIST OF TABLES (Cont.)

Table		Page
A14	Electronics Information: Equipercentiles for Forms 2 and 5 - Grades 10-12, Both Sexes	40
A15	Space Perception: Equipercentiles for Forms 2 and 5 - Grade 10 Males	41
A16	Space Perception: Equipercentiles for Forms 2 and 5 - Grade 10 Females	42
A17	Space Perception: Equipercentiles for Forms 2 and 5 - Grade 11 Males	43
A18	Space Perception: Equipercentiles for Forms 2 and 5 - Grade 11 Females	44
A19	Space Perception: Equipercentiles for Forms 2 and 5 - Grade 12 Males	45
A20	Space Perception: Equipercentiles for Forms 2 and 5 - Grade 12 Females	46
A21	Space Perception: Equipercentiles for Forms 2 and 5 - Grades 10-12, Both Sexes	47
A22	Automotive Information: Equipercentiles for Forms 2 and 5 - Grade 10 Males	48
A23	Automotive Information: Equipercentiles for Forms 2 and 5 - Grade 10 Females	49
A24	Automotive Information: Equipercentiles for Forms 2 and 5 - Grade 11 Males	50
A25	Automotive Information: Equipercentiles for Forms 2 and 5 - Grade 11 Females	51
A26	Automotive Information: Equipercentiles for Forms 2 and 5 - Grade 12 Males	52
A27	Automotive Information: Equipercentiles for Forms 2 and 5 - Grade 12 Females	53
A28	Automotive Information: Equipercentiles for Forms 2 and 5 - Grades 10-12, Both Sexes	54

LIST OF TABLES (Cont.)

Table		Page
A29	Mechanical Comprehension: Equipercentiles for Forms 2 and 5 - Grade 10 Males	55
A30	Mechanical Comprehension: Equipercentiles for Forms 2 and 5 - Grade 10 Females	56
A31	Mechanical Comprehension: Equipercentiles for Forms 2 and 5 - Grade 11 Males	57
A32	Mechanical Comprehension: Equipercentiles for Forms 2 and 5 - Grade 11 Females	58
A33	Mechanical Comprehension: Equipercentiles for Forms 2 and 5 - Grade 12 Males	59
A34	Mechanical Comprehension: Equipercentiles for Forms 2 and 5 - Grade 12 Females	60
A35	Mechanical Comprehension: Equipercentiles for Forms 2 and 5 - Grades 10-12, both Sexes	61
A36	Shop Information: Equipercentiles for Forms 2 and 5 - Grade 10 Males	62
A37	Shop Information: Equipercentiles for Forms 2 and 5 - Grade 10 Females	63
A38	Shop Information: Equipercentiles for Forms 2 and 5 - Grade 11 Males	64
A39	Shop Information: Equipercentiles for Forms 2 and 5 - Grade 11 Females	65
A40	Shop Information: Equipercentiles for Forms 2 and 5 - Grade 12 Males	66
A41	Shop Information: Equipercentiles for Forms 2 and 5 - Grade 12 Females	67
A42	Shop Information: Equipercentiles for Forms 2 and 5 - Grades 10-12, Both Sexes	68
A43	Word Knowledge: Equipercentiles for Forms 2 and 5 - Grade 10 Males	69

LIST OF TABLES (Cont.)

Table		Page
A44	Word Knowledge: Equipercentiles for Forms 2 and 5 - Grade 10 Females	70
A45	Word Knowledge: Equipercentiles for Forms 2 and 5 - Grade 11 Males	71
A46	Word Knowledge: Equipercentiles for Forms 2 and 5 - Grade 11 Females	72
A47	Word Knowledge: Equipercentiles for Forms 2 and 5 - Grade 12 Males	73
A48	Word Knowledge: Equipercentiles for Forms 2 and 5 - Grade 12 Females	74
A49	Word Knowledge: Equipercentiles for Forms 2 and 5 - Grades 10-12, Both Sexes	75
B1	Electronics Composite (EL): Equipercentiles for Forms 2 and 5 - Grade 10 Males	77
B2	Electronics Composite (EL): Equipercentiles for Forms 2 and 5 - Grade 10 Females	78
B3	Electronics Composite (EL): Equipercentiles for Forms 2 and 5 - Grade 11 Males	79
B4	Electronics Composite (EL): Equipercentiles for Forms 2 and 5 - Grade 11 Females	80
B5	Electronics Composite (EL): Equipercentiles for Forms 2 and 5 - Grade 12 Males	81
B6	Electronics Composite (EL): Equipercentiles for Forms 2 and 5 - Grade 12 Females	82
B7	Electronics Composite (EL): Equipercentiles for Forms 2 and 5 - Grades 10-12, Both Sexes	83
B8	General Mechanics Composite (GMC): Equipercentiles for Forms 2 and 5 - Grade 10 Males	84
B9	General Mechanics Composite (GMC): Equipercentiles for Forms 2 and 5 - Grade 10 Females	85

LIST OF TABLES (Cont.)

Table		Page
B10	General Mechanics Composite (GMC): Equipercentiles for Forms 2 and 5 - Grade 11 Males	86
B11	General Mechanics Composite (GMC): Equipercentiles for Forms 2 and 5 - Grade 11 Females	87
B12	General Mechanics Composite (GMC): Equipercentiles for Forms 2 and 5 - Grade 12 Males	88
B13	General Mechanics Composite (GMC): Equipercentiles for Forms 2 and 5 - Grade 12 Females	89
B14	General Mechanics Composite (GMC): Equipercentiles for Forms 2 and 5 - Grades 10-12, Both Sexes	90
B15	Clerical Administrative Composite (CL): Equipercentiles for Forms 2 and 5 - Grade 10 Males	91
B16	Clerical Administrative Composite (CL): Equipercentiles for Forms 2 and 5 - Grade 10 Females	92
B17	Clerical Administrative Composite (CL): Equipercentiles for Forms 2 and 5 - Grade 11 Males	93
B18	Clerical Administrative Composite (CL): Equipercentiles for Forms 2 and 5 - Grade 11 Females	94
B19	Clerical Administrative Composite (CL): Equipercentiles for Forms 2 and 5 - Grade 12 Males	95
B20	Clerical Administrative Composite (CL): Equipercentiles for Forms 2 and 5 - Grade 12 Females	96
B21	Clerical Administrative Composite (CL): Equipercentiles for Forms 2 and 5 - Grades 10-12, Both Sexes	97
B22	General Technical Composite (GT): Equipercentiles for Forms 2 and 5 - Grade 10 Males	98
B23	General Technical Composite (GT): Equipercentiles for Forms 2 and 5 - Grade 10 Females	99
B24	General Technical Composite (GT): Equipercentiles for Forms 2 and 5 - Grade 11 Males	100

LIST OF TABLES (Cont.)

Table		Page
B25	General Technical Composite (GT): Equipercentiles for Forms 2 and 5 - Grade 11 Females	101
B26	General Technical Composite (GT): Equipercentiles for Forms 2 and 5 - Grade 12 Males	102
B27	General Technical Composite (GT): Equipercentiles for Forms 2 and 5 - Grade 12 Females	103
B28	General Technical Composite (GT): Equipercentiles for Forms 2 and 5 - Grades 10-12, Both Sexes	104
B29	Motor Mechanics Composite (MM): Equipercentiles for Forms 2 and 5 - Grade 10 Males	105
B30	Motor Mechanics Composite (MM): Equipercentiles for Forms 2 and 5 - Grade 10 Females	106
B31	Motor Mechanics Composite (MM): Equipercentiles for Forms 2 and 5 - Grade 11 Males	107
B32	Motor Mechanics Composite (MM): Equipercentiles for Forms 2 and 5 - Grade 11 Females	108
B33	Motor Mechanics Composite (MM): Equipercentiles for Forms 2 and 5 - Grade 12 Males	109
B34	Motor Mechanics Composite (MM): Equipercentiles for Forms 2 and 5 - Grade 12 Females	110
B35	Motor Mechanics Composite (MM): Equipercentiles for Forms 2 and 5 - Grades 10-12, Both Sexes	111

Armed Services Vocational Aptitude Battery (ASVAB) Correlational Analysis, ASVAB Form 2 Versus ASVAB Form 5

I. INTRODUCTION

The selection of an appropriate test battery is based on its content and applicability to the vocational trainee population. This report describes the testing of a national sample of U.S. high school students with (a) an established version of Armed Services Vocational Aptitude Battery (ASVAB), and (b) a new, enlarged version of the same test battery.

The purpose of the study was to generate correlation matrices and conversion tables equating components of the old form of the test with scales and components in the new version. The purpose of this report is to describe the research methodology and findings, and to compare and contrast the two test measures. Additionally, correlation and factor analyses were executed which showed four component factors. These are described and used to identify the vocational aptitude contents of the two tests.

II. METHOD

Two paper-and-pencil vocational aptitude tests were presented on consecutive half-days to a sample of U.S. high school students in grades 10 through 12 using a counterbalanced plan, and identical test administration conditions in each school.

The first test battery, designated ASVAB Form 2, consists of 5 practice and 300 test questions grouped into 9 subtests. Form 2 has been in nationwide use in school years 1973-74, 1974-75, and 1975-76 and has been completed by over 3.6 million students. The second test battery, designated ASVAB Form 5, consists of 5 practice and 295 test questions grouped into 12 subtests. Seven subtests of slightly different size and duration are common to Forms 2 and 5. These range from Word Knowledge to Space Perception, and from Mechanical Comprehension to Automotive, Electronics and Shop Information.

Table 1 and Appendix D describe the administration, contents, composites, scoring and types of questions in both vocational aptitude tests used (ASVAB 2; ASVAB 5). Bayroff and Fuchs (1970) describe the development of ASVAB 1 from earlier military tests used in the USA. General and High School Counselor's Manuals (U.S. Department of Defense, 1972; 1973; 1974) give full details of the contents and applications of ASVAB 2. Wilfong and Armstrong (1974) give statistical tables for national, regional and grade scores achieved in high schools, using ASVAB 2.

High School Sample

Figure 1 shows the nationwide distribution of participating high schools and students.

Three hundred forty-three public and private high schools (1.25% of U.S. total) were invited to participate in vocational testing of their students. Twenty-eight schools (26 public and 2 private; 0.10% of U.S. total) wished to participate and were able to schedule Form 2 and Form 5 testing on successive days in the period from November, 1975 to March, 1976. Three thousand seventy students (6.00% of enrollment) voluntarily participated, and two thousand fifty-two (4.01% of enrollment) completed both Form 2 and Form 5 tests (907 in sequence Form 2, then 5; 1,145 in sequence Form 5, then 2). The nationwide distribution of schools and students included all four Federal planning regions as used by Government departments for statistical reporting, and all nine geographical areas, plus the Washington, D.C. Standard Metropolitan Statistical Area (SMSA), making a total of 10 regions. Testing took place in 21 urban, four suburban and three rural schools in 13 single county and multiple county standard metropolitan statistical areas as defined by U.S.

TABLE 1

ADMINISTRATION AND CONTENTS OF VOCATIONAL TESTS

(A) ADMINISTRATION

Abbreviated Name	ASVAB 2	ASVAB 5
Total Time (minutes)	147	165
Instructions & Administration	30	30
Aggregate Testing Time	112	135
Number of Sections	9	12
Number of Questions	305	300
Practice Questions	5	5
Test Questions	300	295
Test Booklet (8 X 10½ in. pages)		
Columns Per Page	1-2	1-2
Test Section Pages	54	57
Optical Scanning Answer Sheets (sides)	3	3
Number of Schools (students) tested	28(2052)	28(2052)
Testing Period (consecutive half days)	November 1975-March 1976	

(B) CONTENTS (QUESTIONS; (MINUTES))

Sub-test and Abbreviation	ASVAB 2	ASVAB 5
Coding Speed (CS)	100(7)	---
General Information (GI)	---	15(7)
Numerical Operations (NO)	---	50(3)
Attention to Detail (AD)	---	30(5)
Word Knowledge (WK)	25(10)	30(10)
Mathematics Knowledge (MK)	---	20(20)
Arithmetic Reasoning (AR)	25(25)	20(20)
Tool Knowledge (TK)	25(10)	---
Space Perception (SP)	25(15)	20(12)
Mechanical Comprehension (MC)	25(15)	20(15)
General Science (GS)	---	20(10)
Shop Information (SI)	25(10)	20(3)
Automotive Information (AI)	25(10)	20(10)
Electronics Information (EI)	25(10)	30(15)

(C) COMPOSITES

Name and Abbreviation of Composite	Form 2 Formula and Max. Score	Form 5 Formula and Max. Score
Electronic (EL)	MC + 2 EI 75	AR + EI 50
General Mechanical (GMC)	SP + 2 SI 75	SP + SI + AR 60
Clerical Administrative (CL)	WK + 1/3 CS 58	WK + AD + NO 110
General Technical (GT)	AR + WK 50	AR + WK 50
Motor Mechanics (MM)	MC + 2 AI 75	MC + AI + MK 60

(D) SCORING AND REPORTING

Correction for Guessing:	Rights - 1/3 Wrongs (Except CS)	No Corrections Applied
Reported to School as:	Percentiles for Same Grade & Sex	Percentages of Maximum Attainable Score
Equipercentiles	(i) Each Grade and Sex reported separately. (ii) Pooled (n = 2052)	

Figure 1

Map showing nationwide distribution of participating high schools and grade 10-12 students

Bureau of Census (1970) and U.S. Department of Commerce (1975). Large, medium-sized and small public (26) and private (2) schools took part, with enrollments in the range of 85 to 4,472 (mean = 1,828; 1973 national average - 742). Approximately equal numbers of grade 10, 11 and 12 males and females were tested, as shown in the small insert on Figure 1. Test answer sheets and records were handled confidentially according to the Privacy Act (PL 93-579).

The school/student sample is a geographically stratified selection of schools interested in vocational testing, in numbers approximately proportional to the national mixture of public versus private, and urban versus suburban versus rural schools. It is not regarded as a random representation because the 2,052 students tested were volunteers, and because neither they nor their schools represented all strata of the nationwide high school population. The national distribution is given by Gertler (1974), Gertler and Barker (1971, 1973). Descriptions of schools and statistics of enrollment were obtained from the national directory compiled by the U.S. Department of Health, Education and Welfare, (1974) and the roster of schools participating in ASVAB testing. National, Federal planning region, and geographical area statistics on high school student subpopulations were from Grant and Lind (1973), and U.S. Department of Commerce (1975).

Consecutive Half-day Testing

Test administration conditions were identical within each school for the presentation of Form 2 and Form 5 on two consecutive days. For reasons of maximum comparability (Flanagan, 1951, pp. 752-3) tests were scheduled at the same time and in the same rooms on either two consecutive mornings or two consecutive afternoons. Approximately 1,000 students were unable to complete both tests on consecutive days, and were excluded from data analysis. Matched pairs of optical scan answer sheets for Form 2 and Form 5 were obtained from the residual 2,052 students.

Test sessions were conducted by trained university faculty or education/psychology graduates and trained military testers. Proctors were members of the school faculty, counselling faculty or graduate students in education or psychology. Many had prior experience as test administrators or researchers. Adherence to ASVAB test administration guidelines and instructions was maintained. These call for disclosure of individual subtests in Form 5 only as soon as all candidates have completed the section.

III. RESULTS

Descriptive Scoring Statistics

Table 2 presents the means and standard deviations for each subtest and composite scores for both ASVAB forms by sex and grade level.

Visual inspection of Table 2 shows that sub group mean scores were higher for grade 11 than for grades 10 and 12 in both sexes and in all tests. Females scored better than or equal to males in Coding Speed (CS) and Attention to Detail (AD). Males scored substantially better than females in Tool Knowledge (TK), Mechanical Comprehension (MC), Shop Information (SI), Automotive Information (AI) and Electronics Information (EI). In Numerical Operations (NO), grade 10 females outperformed grade 10 males. Sixty-three to 66% of maximal possible scores were obtained by grade 11 males in Numerical Operations (NO), Mathematics Knowledge (MK) and General Information (GI), whereas only 47-50% of maximum was achieved in Coding Speed (CS) and Automotive Information (AI-Form 5).

Form 2 Versus Form 5 Correlation Analysis

Pearson product-moment correlations were computed for each subsample and the total sample. Seven 21 x 21 matrices were computed. Each matrix contained data for nine tests from Form 2 and 12 tests from Form 5. One correlation matrix for the total sample population (N = 2,052) is given in Table 3.

In the total sample, results show a wide range of correlations, with two subtests (Word Knowledge, WK; Arithmetic Reasoning, AR) showing similarity between the two forms, and test scores for letter-number manipulation (CS, AD, NO) unrelated to test scores for job and technical knowledge (KT, SI, AI). The five highest cross-correlations were between the two WK subtests (.760); the two AR subtests (.725); MK, Form 5 versus AR, Form 2 (.705); MC versus Electrical Information (EI), Form 5 (.704); and TK versus SI, Form 2 (.701). The lowest cross-correlations were CS versus TK, Form 2 (.010); AD, Form 5 versus SI, Form 2 (.035); AD, Form 5 versus AI, Form 2 (.052); AD versus AI, Form 5 (.055); and NO, Form 5 versus TK, Form 2 (.065).

Sex differences were seen in different grade level subgroups between SI and TK subtests, Form 2; CS and TK subtests, Form 2: EI and MC subtests, Form 5 and AI, Form 2 and AD, Form 5. Male performance was better on SI, TK, AI, Form 2; EK and MC on Form 5. Females exceeded males on CS, Form 2, and AD, Form 5.

Comparisons among the correlation matrices showed considerable variation by grade within such correlation as NO, Form 5 versus TK, Form 2.

TABLE 2

DESCRIPTIVE SCORING STATISTICS : MEANS & STANDARD DEVIATIONS

	GRADE 10 MALES (N=257)		GRADE 10 FEMALES (N=334)		GRADE 11 MALES (N=374)		GRADE 11 FEMALES (N=500)		GRADE 12 MALES (N=281)		GRADE 12 FEMALES (N=306)		GRADE 10-12 BOTH SEXES (N=2052)	
Form 2 Tests	MEAN	S.D.	MEAN	S.D	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
AR	10.32	6.065	8.87	5.286	13.19	5.896	10.87	5.420	12.39	5.898	9.84	5.484	10.95	5.824
EI	10.56	5.314	6.70	4.016	12.99	5.040	7.09	4.406	12.87	5.876	6.47	4.240	9.16	5.593
SP	13.43	6.257	11.75	5.296	15.36	5.498	13.19	5.783	14.37	5.960	12.45	5.354	13.43	5.804
AI	11.35	5.010	7.60	3.802	13.29	4.816	8.30	3.765	12.91	4.550	7.76	4.207	10.03	4.952
MC	11.33	5.321	8.16	3.891	13.00	4.657	9.71	4.265	12.83	5.259	9.14	4.351	10.75	5.007
SI	11.95	4.823	6.69	3.858	13.53	5.082	8.04	3.929	13.34	5.029	7.24	3.971	9.94	5.279
WK	11.04	5.180	10.31	5.011	13.50	4.960	12.19	5.155	12.96	4.865	12.01	5.001	12.06	5.151
CS	39.44	13.092	45.36	13.283	47.12	12.980	51.64	12.959	44.92	13.334	50.45	12.848	47.37	13.637
TK	12.24	5.013	5.48	3.542	14.11	5.539	6.62	4.452	13.53	5.469	5.77	4.003	9.31	5.986
Form 2 Composites														
EL	22.46	14.458	20.56	9.900	39.79	13.493	23.90	11.326	38.57	15.640	22.09	11.012	29.06	14.781
GMC	37.32	13.741	25.13	10.595	42.62	13.146	29.27	11.432	41.05	14.090	26.93	11.572	33.30	14.119
CL	24.21	7.924	25.42	7.752	29.30	7.250	29.42	7.670	27.91	7.700	28.87	7.617	27.79	7.876
GT	21.35	10.122	19.18	9.251	26.70	9.783	23.06	9.266	25.35	9.516	21.85	9.180	23.01	9.811
MM	34.04	13.615	23.37	9.522	40.36	12.613	26.31	9.734	38.65	12.899	24.66	10.709	30.80	13.261
Form 5 Tests														
AR	10.05	4.023	8.98	3.159	12.29	4.047	10.37	3.597	11.57	4.441	9.87	3.552	10.54	3.947
EI	14.45	5.698	11.94	3.543	17.10	5.037	12.90	4.119	16.39	6.621	11.90	3.775	14.12	5.460
SP	10.30	4.216	9.16	3.335	11.61	4.134	10.10	3.735	10.96	4.396	9.61	3.672	10.29	3.985
AI	8.12	4.615	5.46	2.660	9.87	4.880	6.73	2.687	8.97	4.578	5.50	2.614	7.25	4.140
MC	9.19	4.264	6.33	2.628	10.68	4.477	7.06	3.170	9.40	4.641	6.32	2.783	8.08	4.077
SI	10.35	4.694	7.36	3.167	12.11	4.636	8.63	3.336	11.00	5.022	7.66	3.317	9.45	4.381
WK	14.95	6.325	13.41	5.694	18.43	6.278	16.55	6.213	17.89	6.597	15.72	6.227	16.24	6.437
AD	13.04	3.935	14.19	4.226	15.94	4.951	16.02	4.732	14.05	4.674	14.81	4.074	14.88	4.622
NO	24.93	10.647	26.97	10.268	33.14	10.527	33.08	10.870	30.44	10.740	29.89	9.741	30.24	10.912
MK	10.91	4.729	10.27	4.324	12.92	4.956	11.05	4.717	11.99	4.930	10.94	4.607	11.58	4.799
GS	9.09	4.219	7.72	3.465	10.98	4.628	9.14	3.642	9.69	4.456	8.17	3.433	9.17	4.114
GI	8.55	2.766	6.76	1.982	9.58	2,473	7.40	2.024	9.17	2.514	6.99	2.287	8.02	2.554
Form 5 Composites														
EL	24.50	8.607	20.92	5.524	29.89	8.873	23.27	6.611	27.96	9.574	21.77	6.144	24.67	8.240
GMC	30.70	10.400	25.49	6.894	36.02	9.957	29.09	8.161	33.53	10.997	27.14	8.297	30.29	9.768
CL	52.92	16.372	54.57	15.196	67.50	16.978	65.04	17.128	62.39	17.202	60.41	14.860	61.36	17.226
GT	25.00	9.340	22.39	7.471	30.71	9.335	26.92	8.814	29.46	9.846	25.59	8.976	26.78	9.416
MM	28.21	11.122	22.05	7.151	33.47	11.422	25.15	8.183	30.16	12.096	22.77	7.865	26.90	10.468

Factor Analysis

Factor analysis of the correlation matrix presented in Table 3 was performed using a principal axis and Varimax solution (Thurstone, 1950; Kaiser, 1958). The final analysis yielded four factors which accounted for 68.9% of the variance. Tentative solutions, yielding five and six factors, accounted for 72.6% and 75.5% of the variance respectively, but did not lead to improvement in the factor structure.

Selection of the Varimax rotation method (Harman, 1960, p. 301) has the effect of simplifying columns within the factor loading matrix, thus emphasizing structural simplicity.

Table 4 shows the results of the final analysis. It lists factor loadings for all 21 subtests in the upper half. Eight entries in the range 0.40 to 0.53 are listed in the lower half. The seven subtests which are common to ASVAB Form 2 and ASVAB Form 5 (AR, EI, SP, AI, MC, SI, WK) are clearly paired in the factor structure. The factorial relationships of the other seven subtests (CS & TK in Form 2; AD, NO, MK, SK, & GI in Form 5) appear to be reasonably consistent. The four defined factors are:

Factor 1: Clearly associated with subtests measuring non-scholastic job or hobby related knowledge. High factor scores may be predictive of success in skill training and/or technical vocation. Tentatively identified as "technical information."

Factor 2: Strongly associated with scholastically oriented subtests. Incapable of being resolved into classical independent verbal and quatitative components, even in 5-factor, 6-factor and 7-factor solutions. Identified as "scholastic information."

Factor 3: Contains loadings of 0.40 or more on only three subtests, two of which are speeded tests. All three subtests require careful "attention to explicit rules."

Factor 4: Clearly associated with "spatial perception" capability, and should be identified with that title. Includes ability to interpret diagrams not labeled with words.

Equipercentile Tables

Percentiles are the sets of values which divide a total frequency distribution into 100 equal parts. Equipercentiles are sets of values for two or more frequency distributions which are either equivalent or have been measured using different metrics on the same sample (Flanagan, 1951, pp. 752-6; Lindsay and Prichard, 1971).

TABLE 4

RESULTS OF FACTOR ANALYSIS: FACTOR LOSDINGS
FOR 21 TESTS

FACTOR 1 (9 Sub-tests) Technical Information and Related Knowledge	FACTOR 2 (6 Sub-tests) Scholastic Information: Involves both Verbal and Quantitative Knowledge	FACTOR 3 (3 Sub-tests) Attention to Explicit Rules: Includes Ability to Work at Speed	FACTOR 4 (3 Sub-tests) Spatial perception: Includes Ability to Interpret Vectorial Diagrams
TK2 0.818	WK5 0.793	AD5 0.826	SP2 0.791
SI2 0.785	WK2 0.763	NO5 0.757	SP5 0.721
AI5 0.768	GS5 0.681	CS2 0.743	MC2 0.540
AI2 0.762	MK5 0.664		
SI5 0.735	AR2 0.620		
EI2 0.712	AR5 0.614		
EI5 0.647			
MC5 0.629			
GI5 0.530			
Other loadings in range 0.40 to 0.53			
MC2 0.530	EI5 0.491	None	AR2 0.482
GS5 0.447	GI5 0.485		MK5 0.435
	MC5 0.433		AR5 0416

Note: All 9 Form 2 subtests and all 2 Form 5 subtests appear only once in upper half of table.

The equipercentile computer program for equating ASVAB Form 2 and ASVAB Form 5 establishes a relationship from raw score on Form 2 to raw score on Form 5 through the medium of a common percentile scale. The fitting of the curve to the observed scores, which is usually done by hand and eye, was accomplished by a least-squares regression procedure (Lindsay and Prichard, 1971).

Equipercentile tables were produced for all seven subtests and for all five composites. The former yield 49 equipercentile tables, which are contained in Appendix A. The latter yield 35 tables, contained in Appendix B. School counsellors, vocational specialists and human resource researchers can use them to determine the Form 5 raw score and percentile equivalents to any given Form 2 raw score or percentile. Thus, scores for Form 5 may be equated to scores on Form 2.

IV. INTERPRETATION AND DISCUSSION

ASVAB Forms 1, 2 and 5

Approximately 3.646 million students have taken part in the Armed Forces high school testing program during school years 1973-76, using ASVAB Form 2. Approximately 2.549 million students, in school years 1968-73, were administered ASVAB Form 1. A cross-comparison of ASVAB Form 1 and ASVAB Form 2 results was made (Wilfong, Armstrong, and Huckell; 1974) for 873,628 and 771,031 students, respectively. Comparison of Form 2 results for 2,052 students in the present study and 771,031 students in school year 1973-74 shows comparable or slightly lower group average scores for individual tests in the smaller group, similar standard deviations for every test, identical patterns of male-female score differences, and grade 11 superiority over grade 12 scores in 5 of 18 subsamples (N = 771,031) compared with 18 of 18 subsamples (N = 2,052). Accordingly, test scores on Form 2 were reported to students and their counsellors as raw scores and percentiles computed for their grade and sex. Form 5 test scores were reported as raw scores and percent of maximum test score.

Inter-battery comparison between Form 1, Form 2 and Form 5 shows that Forms 1 and 2 differed in their difficulty level, but not in their test structure or content, while Forms 2 and 5 differed in structure and content. In constructing ASVAB Form 2, tests AR, EI, SP, AI and MC were reduced in difficulty, CS was unchanged and WK was made more difficult (Wilfong, Armstrong, and Huckell, 1974). In developing ASVAB Form 5 from ASVAB Form 2, tests CS and TK were eliminated, tests AR, SP, MC, SI and AI were reduced in length, tests WK and EI were increased in length, and five new tests were added - GI, NO, AD, MD and SK.

Reliability

Reliability is defined as the property of a test to produce consistent scores from one administration to another (Thorndike, 1971, p. 357). The lack of consistency in a set of measurements made repeatedly on a sample may be expressed as intra-individual variance, and the standard error of measurement is its positive square root. When two equivalent measurements are obtained for each individual, a correlation coefficient between the data sets provides one form of reliability coefficient.

Table 3 presents inter-test correlations for ASVAB Forms 2 and 5. It shows, in particular, that the Form 2 and Form 5 variants of WK and AR have relatively high correlation coefficients. All correlational values for the total sample are in the range 0.56-0.76.

TABLE 3

MATRIX OF INTER-TEST CORRELATIONS (N = 2052)

	FORM 2									FORM 5											
Form 2	AR	EI	SP	AI	PC	SI	WK	CS	TK	AR	EI	SP	AI	PC	SI	WK	AD	NO	PA	CS	GI	Form 2
AR	1.000	0.460	0.564	0.365	0.534	0.389	0.554	0.365	0.317	0.725	0.478	0.467	0.378	0.502	0.408	0.635	0.184	0.433	0.704	0.503	0.445	AR
EI	0.460	1.000	0.461	0.622	0.609	0.647	0.419	0.115	0.613	0.438	0.619	0.399	0.538	0.578	0.551	0.456	0.071	0.177	0.405	0.494	0.448	EI
SP	0.564	0.461	1.000	0.380	0.633	0.442	0.437	0.284	0.422	0.518	0.445	0.677	0.365	0.523	0.387	0.477	0.147	0.256	0.535	0.454	0.327	SP
AI	0.365	0.622	0.380	1.000	0.531	0.647	0.301	0.030	0.623	0.351	0.482	0.310	0.544	0.489	0.516	0.316	0.092	0.121	0.269	0.374	0.431	AI
PC	0.534	0.609	0.633	0.531	1.000	0.559	0.535	0.233	0.538	0.548	0.583	0.547	0.494	0.612	0.514	0.581	0.141	0.262	0.511	0.533	0.472	PC
SI	0.389	0.647	0.442	0.647	0.559	1.000	0.377	0.061	0.701	0.364	0.545	0.378	0.571	0.553	0.574	0.382	0.045	0.117	0.327	0.471	0.418	SI
WK	0.595	0.419	0.437	0.301	0.533	0.377	1.000	0.316	0.253	0.531	0.452	0.381	0.358	0.453	0.424	0.743	0.137	0.264	0.571	0.530	0.459	WK
CS	0.365	0.115	0.284	0.030	0.233	0.061	0.316	1.000	0.010	0.313	0.221	0.253	0.065	0.148	0.161	0.302	0.417	0.579	0.417	0.221	0.178	CS
TK	0.317	0.613	0.422	0.625	0.558	0.701	0.253	0.010	1.000	0.373	0.516	0.351	0.566	0.547	0.504	0.295	0.064	0.065	0.240	0.377	0.443	TK
Form 5																						Form 5
AR	0.725	0.438	0.518	0.351	0.548	0.364	0.531	0.313	0.373	1.000	0.522	0.506	0.299	0.539	0.446	0.623	0.224	0.434	0.704	0.530	0.470	AR
EI	0.478	0.619	0.445	0.482	0.583	0.545	0.452	0.221	0.516	0.522	1.000	0.453	0.616	0.704	0.661	0.561	0.147	0.279	0.487	0.639	0.527	EI
SP	0.467	0.399	0.677	0.310	0.547	0.378	0.381	0.253	0.351	0.506	0.453	1.000	0.339	0.523	0.363	0.476	0.202	0.319	0.525	0.430	0.337	SP
AI	0.378	0.538	0.350	0.584	0.494	0.571	0.358	0.065	0.566	0.299	0.616	0.339	1.000	0.617	0.691	0.371	0.015	0.251	0.324	0.555	0.465	AI
PC	0.502	0.578	0.523	0.483	0.642	0.553	0.453	0.148	0.547	0.539	0.704	0.525	0.617	1.000	0.634	0.514	0.116	0.224	0.459	0.615	0.512	PC
SI	0.408	0.551	0.387	0.516	0.514	0.564	0.424	0.161	0.564	0.446	0.661	0.383	0.691	0.634	1.000	0.461	0.107	0.256	0.402	0.556	0.502	SI
WK	0.635	0.456	0.477	0.316	0.581	0.333	0.743	0.302	0.295	0.623	0.561	0.456	0.371	0.514	0.461	1.000	0.164	0.412	0.636	0.633	0.517	WK
AD	0.184	0.071	0.147	0.092	0.141	0.045	0.137	0.417	0.064	0.224	0.147	0.202	0.015	0.116	0.107	0.164	1.000	0.455	0.224	0.118	0.136	AD
NO	0.433	0.177	0.256	0.121	0.262	0.117	0.264	0.579	0.065	0.434	0.279	0.319	0.251	0.224	0.253	0.412	0.455	1.000	0.352	0.270	0.276	NO
PA	0.703	0.405	0.535	0.269	0.531	0.327	0.571	0.417	0.240	0.704	0.487	0.525	0.324	0.459	0.402	0.636	0.224	0.502	1.000	0.584	0.470	PA
CS	0.503	0.494	0.454	0.374	0.533	0.475	0.530	0.221	0.377	0.530	0.639	0.430	0.555	0.615	0.556	0.633	0.118	0.270	0.584	1.000	0.413	CS
GI	0.445	0.495	0.327	0.427	0.474	0.475	0.459	0.178	0.443	0.470	0.527	0.337	0.465	0.512	0.502	0.517	0.136	0.276	0.470	0.413	1.000	GI

Validity

The validity of a test or of a test battery is the property which makes it useful for a specified purpose. There is no single validity for a test or test battery but rather a validity for each application. The job-related and hobby-related nature of TK Form 2, SI Forms 2 and 5, AI Forms 2 and 5, EI Forms 2 and 5, MC Form 5 and GI Form 5 in Factor 1, and their clear separation in the factor analysis from Factors 2-4 (scholastic information, attention to explicit rules, and spatial perception) can be interpreted as evidence that both ASVAB Form 2 and Form 5 are valid instruments for testing for vacational technical information in high school students. Factors 2-4 are possible predictors of more general capabilities: (1) ability to read, understand and respond to questions, (2) ability to work according to directions, and (3) ability to perceive and respond to visual displays and questions, e.g., mechanical drawings.

The uses of ASVAB Form 1 and 2 for predicting secondary school success, technical school success, high school vocational-technical course success and civilian vocational-technical school completion have been examined and assessed by Harris and Huckell (1974), Vitola, Mullins, and Croll (1973), Bower, Lewis, and Krockover (1975), and Jensen and Valentine (1976). There is good evidence of correlation between ASVAB scores and suitability for vocational technical training, although much variation exists between technical specialties and between individual students. Further work is required to establish whether relationships exist between test scores and long-term job success.

V. CONCLUSIONS

Suitably designed vocational aptitude tests appear, from these results, to clearly distinguish non-scholastic, technical knowledge from scholastic information in high school boys and girls. By testing 2,052 high school students selected from all regions of the continental U.S. and from small, medium and large public and private schools, a wide range of test scores was obtained on a nine-test and on a twelve-test battery. By arranging for standarized test administration and instructions, with all students present on two consecutive half-days, and by using a counterbalanced sequencing plan, the possible effects of fatigue or training, and of unwanted environmental effects were minimized. An extensive program of optical scanning and computer analysis of scores led to inter-test comparisons, correlation and factor analyses, and a set of equipercentile tables equating the common tests in both batteries.

The twelve-subtest battery contains four new subtests, three of which are found to be vocationally oriented. Seven subtests common to both batteries produced scores with reliability coefficients in the range of 0.56-0.76. A new factor -- tentatively identified as "attention to explicit rules" -- had the highest single factor loading of 21 tests. No evidence was found that this factor had been clearly identified by earlier workers, although "carefulness" and "perceptual speed" were second-order or third-order factors detected during the testing of World War II aviation cadets (Cronbach, 1960).

Content analysis suggests that Form 5 of ASVAB is an effective instrument for testing technical ability, academic ability, spatial perception and attention to explicit rules in high school males and females. The new battery covers a wider topical range than Form 2 of ASVAB by adding General Science, Mathematics Knowledge, Numerical Operations and General Information.

REFERENCES

Bayroff, A. G., & Fuchs, E. F. The Armed Services Vocational Aptitude Battery. Technical Research Report 1161, Arlington, Va., U. S. Army, 1970.

Bower, L., Lewis, R., & Krockover, J. A Concurrent Validity Study Relating the Armed Services Vocational Aptitude Battery to Success in High School Vocational-Technical Courses. Technical Research Note 74-4. Research Division, Armed Forces Vocational Testing Group, Randolph Air Force Base, Texas, January 1975.

Cronbach, L. J. Essentials of Psychological Testing (2nd. ed.). New York: Harper & Brothers, Publishers, 1960.

Flanagan, J. C. Units, Scores and Norms. Educational Measurement. Chapter 17, Edited by E. F. Lindquist. Washington, D.C.: American Council on Eduaction, 1951, 695-763.

Gertler, D. B. Nonpublic Schools in Large Cities, 1970-71. U. S. Department of Health, Education, and Welfare. DHEW Publication No. (OE) 74-11425, Washington, D. C.: U. S. Government Printing Office, 1974.

Gertler, D. B., & Barker, L. A. Statistics of Public and Nonpublic Elementary and Secondary Day Schools, 1968-69. U. S. Department of Health, Education, and Welfare, DHEW Publication No. (OE) 72-25, Washington, D. C.: U. S. Government Printing Office, 1971.

Gertler, D. B., & Barker, L. A. Statistics of Nonpublic Elementary and Secondary Schools, 1970-71. U. S. Department of Health, Education, and Welfare, DHEW Publication No. (OE) 74-11420, Washington, D. C.: U. S. Government Printing Office, 1973.

Grant, W. V., & Lind, C. G. Digest of Educational Statistics, 1973 Edition. U. S. Department of Health, Education and Welfare, DHEW Publication No. (OE) 74-11103, Washington, D. C.: U. S. Government Printing Office, 1973.

Harman, H. H. Modern Factor Analysis. Chicago: University of Chicago Press, 1960, Chapter 14, 289-308.

Harris, R. K., & Huckell, R. K. Predicting Academic Success In Secondary Schools from the General Technical Composite on the Armed Services Vocational Aptitude Battery. AFVTG Technical Research Report Number 74-2. Research Division, Armed Forces Vocational Testing Group, Randolph Air Force Base, Texas, December, 1974.

Jensen, H. E., & Valentine, L. D., Jr. Validation of ASVAB-2 Against Civilian Vocational-Technical High School Criteria. AFHRL-TR-76-16, AD-A023 118. Lackland AFB, TX: Personnel Research Division, Air Force Human Resources Laboratory, March 1976.

Kaiser, H. F. The Varimax Criterion for Analytic Rotation in Factor Analysis. Psychometrika, 1958, 23, 187-200.

Lindsay, C. A., & Prichard, M. A. An Analytical Procedure for the Equipercentile Method of Equating Tests. Journal of Educational Measurement, 1971, 8, 203-207.

Thorndike, R. L. (Ed.) Educational Measurement (2nd ed.). Washington, D. C.: American Council on Education, 1971.

Thurstone, L. L. Multiple Factor Analysis. Chicago: University of Chicago Press, 1950.

U. S. Bureau of Census. 1970 Census of Population. Vol. 1, Part A, Section 1.

U. S. Department of Commerce. The Statistical Abstract of the U. S. (96th ed.). Section 4, Education, 1975.

U. S. Department of Defense (1972). High School Counselor's Manual. Armed Services Vocational Aptitude Battery.

U. S. Department of Defense (1973). Counselor's Manual, Vol. (1). DOD1304.12X, Armed Services Vocational Aptitude Battery.

U. S. Department of Defense (1974). Counselor's Manual, Vol. (2). DOD1304.12Y, Armed Services Vocational Aptitude Battery.

U. S. Department of Health, Education, and Welfare. Directory of Public Elementary and Secondary Schools and Selected Districts, Fall 1972. Washington, D. C.: Government Printing Office, 1974.

Vitola, B., Mullins, C., & Croll, P. R. Validity of Armed Services Vocational Aptitude Battery, Form 1, to Predict Technical School Success. AFHRL-TR-73-7, AD 767 578. Lackland AFB, TX: Personnel Research Division, Air Force Human Resources Laboratory, July 1973.

Wilfong, H. D., & Armstrong, R. J. Reference Tables for the Armed Services Vocational Aptitude Battery. Technical Research Note AFVTG 74-1. Research Division, Armed Forces Vocational Testing Group, Randolph Air Force Base, Texas, March 1974.

Wilfong, H. D., Armstrong, R. J., & Huckell, R. K., Jr. Percentile Normative Tables for the Armed Services Vocational Aptitude Battery (1973-74 School Year Data Base). Technical Research Note 74-3. Research Division, Armed Forces Vocational Testing Group, Randolph Air Force Base, Texas, December 1974.

APPENDIX A:

Equipercentile Conversion Tables for Subtests
AR, EI, SP, AI, MC, SI And WK

Table A1. ARITHMETIC REASONING: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 MALES

2	5	PERCENTILE
25.	20.	99.
24.	20.	98.
23.	19.	97.
22.	18.	96.
21.	18.	94.
20.	17.	92.
19.	16.	91.
18.	16.	89.
17.	15.	85.
16.	14.	81.
15.	13.	79.
14.	13.	76.
13.	12.	71.
12.	11.	62.
11.	11.	55.
10.	10.	51.
9.	9.	42.
8.	8.	33.
7.	8.	30.
6.	7.	27.
5.	6.	20.
4.	6.	14.
3.	5.	11.
2.	4.	8.
1.	4.	6.
0.	3.	3.

Table A2. ARITHMETIC REASONING: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 FEMALES

2	5	PERCENTILE
25.	19.	99.
24.	19.	99.
23.	18.	99.
22.	17.	99.
21.	17.	98.
20.	16.	98.
19.	15.	98.
18.	15.	96.
17.	14.	93.
16.	13.	89.
15.	13.	86.
14.	12.	84.
13.	11.	78.
12.	11.	71.
11.	10.	67.
10.	10.	62.
9.	9.	53.
8.	8.	44.
7.	8.	39.
6.	7.	33.
5.	6.	24.
4.	6.	17.
3.	5.	14.
2.	4.	10.
1.	4.	5.
0.	3.	2.

Table A3. ARITHMETIC REASONING: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 MALES

2	5	PERCENTILE
25.	20.	99.
24.	20.	97.
23.	19.	96.
22.	18.	95.
21.	18.	90.
20.	17.	84.
19.	16.	81.
18.	16.	77.
17.	15.	72.
16.	14.	66.
15.	14.	61.
14.	13.	56.
13.	12.	48.
12.	11.	41.
11.	11.	35.
10.	10.	32.
9.	9.	26.
8.	9.	19.
7.	8.	15.
6.	7.	13.
5.	7.	9.
4.	6.	5.
3.	5.	4.
2.	5.	4.
1.	4.	2.
0.	3.	1.

Table A4. ARITHMETIC REASONING: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 FEMALES

2	5	PERCENTILE
25.	20.	99.
24.	20.	99.
23.	19.	99.
22.	18.	98.
21.	18.	96.
20.	17.	94.
19.	16.	93.
18.	15.	90.
17.	15.	85.
16.	14.	80.
15.	13.	77.
14.	13.	73.
13.	12.	65.
12.	11.	58.
11.	11.	53.
10.	10.	48.
9.	9.	39.
8.	8.	30.
7.	8.	25.
6.	7.	21.
5.	6.	15.
4.	6.	9.
3.	5.	6.
2.	4.	5.
1.	3.	3.
0.	3.	1.

Table A5. ARITHMETIC REASONING: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 MALES

2	5	PERCENTILE
25+	20+	99+
24+	20+	96+
23+	20+	95+
22+	19+	93+
21+	18+	90+
20+	17+	87+
19+	17+	85+
18+	16+	82+
17+	15+	78+
16+	14+	73+
15+	14+	70+
14+	13+	66+
13+	12+	58+
12+	11+	48+
11+	11+	42+
10+	10+	36+
9+	9+	28+
8+	8+	21+
7+	8+	18+
6+	7+	14+
5+	6+	9+
4+	5+	7+
3+	5+	6+
2+	4+	4+
1+	3+	2+
0+	2+	1+

Table A6. ARITHMETIC REASONING: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 FEMALES

2	5	PERCENTILE
25.	20.	99.
24.	20.	99.
23.	19.	99.
22.	18.	98.
21.	18.	96.
20.	17.	94.
19.	16.	93.
18.	15.	92.
17.	15.	89.
16.	14.	86.
15.	13.	83.
14.	13.	80.
13.	12.	74.
12.	11.	66.
11.	11.	62.
10.	10.	57.
9.	9.	47.
8.	9.	37.
7.	8.	30.
6.	7.	24.
5.	7.	17.
4.	6.	13.
3.	5.	10.
2.	4.	8.
1.	4.	5.
0.	3.	2.

Table A7. ARITHMETIC REASONING: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADES 10-12, BOTH SEXES

2	5	PERCENTILE
25	20	99
24	20	98
23	19	98
22	18	97
21	18	94
20	17	92
19	16	90
18	16	88
17	15	83
16	14	79
15	13	76
14	13	72
13	12	65
12	11	57
11	11	52
10	10	47
9	9	39
8	8	30
7	8	26
6	7	22
5	6	15
4	6	10
3	5	8
2	4	6
1	4	4
0	3	2

Table A8. ELECTRONICS INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 MALES

2	5	PERCENTILE
25.	30.	99.
24.	29.	99.
23.	28.	99.
22.	27.	99.
21.	26.	98.
20.	25.	95.
19.	24.	94.
18.	23.	91.
17.	22.	87.
16.	20.	81.
15.	19.	78.
14.	18.	74.
13.	17.	66.
12.	16.	57.
11.	15.	54.
10.	14.	48.
9.	13.	40.
8.	12.	33.
7.	11.	30.
6.	10.	25.
5.	8.	17.
4.	7.	10.
3.	6.	7.
2.	5.	5.
1.	4.	3.
0.	3.	1.

Table A9. ELECTRONICS INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 FEMALES

2	5	PERCENTILE
25.	30.	99.
24.	30.	99.
23.	29.	99.
22.	28.	99.
21.	27.	99.
20.	26.	99.
19.	25.	99.
18.	24.	99.
17.	23.	99.
16.	22.	99.
15.	21.	99.
14.	20.	98.
13.	19.	96.
12.	18.	92.
11.	17.	89.
10.	16.	84.
9.	14.	73.
8.	13.	62.
7.	12.	55.
6.	11.	49.
5.	10.	39.
4.	9.	29.
3.	8.	24.
2.	7.	19.
1.	6.	11.
0.	5.	4.

Table A10. ELECTRONICS INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 MALES

2	5	PERCENTILE
25.	30.	99.
24.	30.	99.
23.	29.	98.
22.	28.	98.
21.	27.	95.
20.	26.	92.
19.	24.	90.
18.	23.	87.
17.	22.	79.
16.	21.	70.
15.	20.	65.
14.	19.	58.
13.	18.	45.
12.	16.	35.
11.	15.	30.
10.	14.	27.
9.	13.	21.
8.	12.	15.
7.	11.	12.
6.	10.	10.
5.	8.	8.
4.	7.	5.
3.	6.	4.
2.	5.	3.
1.	4.	2.
0.	3.	1.

Table A11. ELECTRONICS INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 FEMALES

2	5	PERCENTILE
25.	30.	99.
24.	30.	99.
23.	30.	99.
22.	29.	99.
21.	28.	99.
20.	27.	99.
19.	25.	99.
18.	24.	99.
17.	23.	99.
16.	22.	98.
15.	21.	96.
14.	20.	95.
13.	19.	90.
12.	18.	85.
11.	17.	81.
10.	16.	76.
9.	15.	66.
8.	14.	54.
7.	12.	48.
6.	11.	43.
5.	10.	33.
4.	9.	24.
3.	8.	19.
2.	7.	14.
1.	6.	8.
0.	5.	3.

Table A12. ELECTRONICS INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 MALES

2	5	PERCENTILE
25	30	99
24	29	99
23	28	98
22	27	96
21	26	91
20	24	85
19	23	83
18	22	81
17	21	75
16	20	67
15	19	62
14	18	57
13	17	49
12	15	41
11	14	37
10	13	33
9	12	25
8	11	19
7	10	16
6	9	15
5	8	10
4	7	7
3	5	6
2	4	6
1	3	4
0	2	1

Table A13. ELECTRONICS INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 FEMALES

2	5	PERCENTILE
25	30	99
24	29	99
23	28	99
22	27	99
21	26	99
20	25	99
19	24	99
18	23	99
17	22	99
16	21	99
15	20	98
14	19	97
13	18	94
12	17	89
11	16	86
10	15	81
9	14	71
8	13	62
7	12	55
6	11	49
5	10	37
4	9	25
3	8	20
2	7	17
1	6	11
0	5	4

Table A14. ELECTRONICS INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADES 10-12, BOTH SEXES

2	5	PERCENTILE
25+	30+	99+
24+	29+	99+
23+	28+	99+
22+	27+	99+
21+	26+	98+
20+	25+	96+
19+	24+	95+
18+	23+	94+
17+	22+	91+
16+	21+	87+
15+	20+	84+
14+	19+	81+
13+	18+	75+
12+	17+	68+
11+	16+	64+
10+	15+	60+
9+	14+	51+
8+	13+	42+
7+	12+	37+
6+	11+	33+
5+	10+	25+
4+	9+	17+
3+	8+	14+
2+	6+	11+
1+	5+	7+
0+	4+	2+

Table A15. SPACE PERCEPTION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 MALES

2	5	PERCENTILE
25.	18.	99.
24.	18.	96.
23.	17.	94.
22.	16.	92.
21.	16.	87.
20.	15.	81.
19.	14.	78.
18.	14.	75.
17.	13.	70.
16.	12.	62.
15.	12.	58.
14.	11.	53.
13.	10.	46.
12.	10.	39.
11.	9.	34.
10.	8.	31.
9.	8.	25.
8.	7.	20.
7.	6.	17.
6.	6.	15.
5.	5.	12.
4.	4.	8.
3.	4.	6.
2.	3.	5.
1.	2.	3.
0.	1.	1.

Table A16. SPACE PERCEPTION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 FEMALES

2	5	PERCENTILE
25.	18.	99.
24.	17.	99.
23.	16.	98.
22.	16.	98.
21.	15.	96.
20.	15.	93.
19.	14.	91.
18.	13.	89.
17.	13.	85.
16.	12.	78.
15.	11.	73.
14.	11.	68.
13.	10.	59.
12.	9.	48.
11.	9.	41.
10.	8.	38.
9.	8.	31.
8.	7.	23.
7.	6.	19.
6.	6.	17.
5.	5.	11.
4.	4.	7.
3.	4.	5.
2.	3.	4.
1.	2.	2.
0.	2.	1.

Table A17. SPACE PERCEPTION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 MALES

2	5	PERCENTILE
25.	19.	99.
24.	18.	96.
23.	17.	93.
22.	16.	90.
21.	16.	82.
20.	15.	75.
19.	14.	72.
18.	14.	68.
17.	13.	59.
16.	12.	49.
15.	12.	43.
14.	11.	39.
13.	10.	32.
12.	9.	25.
11.	9.	21.
10.	8.	19.
9.	7.	14.
8.	7.	10.
7.	6.	9.
6.	5.	7.
5.	5.	4.
4.	4.	2.
3.	3.	2.
2.	2.	1.
1.	2.	1.
0.	1.	1.

Table A18. SPACE PERCEPTION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 FEMALES

2	5	PERCENTILE
25.	18.	99.
24.	17.	98.
23.	17.	96.
22.	16.	95.
21.	15.	91.
20.	15.	85.
19.	14.	81.
18.	13.	78.
17.	13.	72.
16.	12.	65.
15.	11.	61.
14.	11.	58.
13.	10.	50.
12.	9.	41.
11.	9.	36.
10.	8.	31.
9.	7.	23.
8.	7.	16.
7.	6.	14.
6.	6.	11.
5.	5.	8.
4.	4.	6.
3.	4.	5.
2.	3.	3.
1.	2.	2.
0.	2.	1.

Table A19. SPACE PERCEPTION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 MALES

2	5	PERCENTILE
25+	19+	99+
24+	18+	96+
23+	17+	94+
22+	16+	93+
21+	16+	87+
20+	15+	78+
19+	14+	74+
18+	14+	70+
17+	13+	62+
16+	12+	54+
15+	12+	50+
14+	11+	46+
13+	10+	40+
12+	9+	34+
11+	9+	31+
10+	8+	27+
9+	7+	19+
8+	7+	14+
7+	6+	12+
6+	5+	10+
5+	5+	7+
4+	4+	5+
3+	3+	4+
2+	2+	3+
1+	2+	2+
0+	1+	1+

Table A20. SPACE PERCEPTION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 FEMALES

2	5	PERCENTILE
25.	18.	99.
24.	18.	99.
23.	17.	98.
22.	16.	97.
21.	16.	94.
20.	15.	91.
19.	14.	89.
18.	14.	86.
17.	13.	79.
16.	12.	71.
15.	12.	68.
14.	11.	63.
13.	10.	55.
12.	10.	44.
11.	9.	38.
10.	8.	34.
9.	8.	26.
8.	7.	18.
7.	6.	14.
6.	6.	12.
5.	5.	8.
4.	4.	6.
3.	4.	5.
2.	3.	4.
1.	2.	3.
0.	2.	1.

Table A21. SPACE PERCEPTION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADES 10-12, BOTH SEXES

2	5	PERCENTILE
25+	18+	99+
24+	18+	97+
23+	17+	96+
22+	16+	94+
21+	16+	90+
20+	15+	84+
19+	14+	81+
18+	14+	78+
17+	13+	71+
16+	12+	63+
15+	12+	59+
14+	11+	55+
13+	10+	47+
12+	10+	39+
11+	9+	34+
10+	8+	30+
9+	8+	23+
8+	7+	17+
7+	6+	14+
6+	5+	12+
5+	5+	8+
4+	4+	6+
3+	3+	4+
2+	3+	3+
1+	2+	2+
0+	1+	1+

Table A22. AUTOMOTIVE INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 MALES

2	5	PERCENTILE
25.	20.	99.
24.	19.	99.
23.	19.	99.
22.	18.	98.
21.	17.	97.
20.	16.	95.
19.	15.	93.
18.	14.	92.
17.	13.	88.
16.	13.	81.
15.	12.	77.
14.	11.	71.
13.	10.	62.
12.	9.	53.
11.	8.	48.
10.	7.	43.
9.	6.	33.
8.	6.	24.
7.	5.	19.
6.	4.	15.
5.	3.	8.
4.	2.	5.
3.	1.	4.
2.	0.	4.
1.	-0.	3.
0.	-1.	2.

Table A23. AUTOMOTIVE INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 FEMALES

2	5	PERCENTILE
25.	19.	99.
24.	18.	99.
23.	18.	99.
22.	17.	99.
21.	16.	99.
20.	15.	99.
19.	15.	99.
18.	14.	99.
17.	13.	99.
16.	12.	99.
15.	11.	99.
14.	11.	98.
13.	10.	94.
12.	9.	85.
11.	8.	80.
10.	8.	73.
9.	7.	60.
8.	6.	48.
7.	5.	42.
6.	5.	36.
5.	4.	26.
4.	3.	17.
3.	2.	12.
2.	2.	9.
1.	0.	5.
0.	0.	1.

Table A24. AUTOMOTIVE INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 MALES

2	5	PERCENTILE
25.	20.	99.
24.	20.	99.
23.	19.	98.
22.	18.	97.
21.	17.	94.
20.	16.	89.
19.	15.	87.
18.	15.	84.
17.	14.	78.
16.	13.	71.
15.	12.	66.
14.	11.	61.
13.	10.	49.
12.	9.	37.
11.	8.	29.
10.	7.	23.
9.	6.	15.
8.	5.	11.
7.	4.	9.
6.	3.	7.
5.	3.	4.
4.	2.	3.
3.	0.	3.
2.	-0.	2.
1.	-1.	1.
0.	-2.	1.

Table A25. AUTOMOTIVE INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 FEMALES

2	5	PERCENTILE
25.	20.	99.
24.	19.	99.
23.	18.	99.
22.	17.	99.
21.	16.	99.
20.	16.	99.
19.	15.	99.
18.	14.	99.
17.	13.	98.
16.	12.	96.
15.	12.	95.
14.	11.	94.
13.	10.	91.
12.	9.	84.
11.	8.	79.
10.	8.	72.
9.	7.	58.
8.	6.	42.
7.	5.	33.
6.	5.	28.
5.	4.	19.
4.	3.	11.
3.	2.	7.
2.	1.	6.
1.	0.	4.
0.	-0.	1.

Table A26. AUTOMOTIVE INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 MALES

2	5	PERCENTILE
25+	20+	99+
24+	20+	99+
23+	19+	99+
22+	18+	98+
21+	17+	96+
20+	16+	92+
19+	15+	90+
18+	14+	88+
17+	13+	83+
16+	12+	73+
15+	12+	67+
14+	11+	61+
13+	10+	50+
12+	9+	39+
11+	8+	33+
10+	7+	27+
9+	6+	18+
8+	5+	12+
7+	4+	10+
6+	3+	9+
5+	2+	6+
4+	1+	4+
3+	0+	3+
2+	-0+	2+
1+	-1+	1+
0+	-2+	1+

Table A27. AUTOMOTIVE INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 FEMALES

2	5	PERCENTILE
25+	19+	99+
24+	18+	99+
23+	17+	99+
22+	17+	99+
21+	16+	99+
20+	15+	99+
19+	14+	99+
18+	13+	99+
17+	13+	99+
16+	12+	97+
15+	11+	96+
14+	10+	96+
13+	10+	91+
12+	9+	83+
11+	8+	79+
10+	7+	73+
9+	7+	62+
8+	6+	49+
7+	5+	40+
6+	4+	34+
5+	4+	24+
4+	3+	15+
3+	2+	12+
2+	1+	9+
1+	0+	6+
0+	-0+	3+

Table A28. AUTOMOTIVE INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADES 10-12, BOTH SEXES

2	5	PERCENTILE
25+	20+	99+
24+	20+	99+
23+	19+	99+
22+	18+	99+
21+	17+	98+
20+	16+	96+
19+	15+	95+
18+	15+	94+
17+	14+	91+
16+	13+	87+
15+	12+	85+
14+	11+	82+
13+	10+	75+
12+	9+	65+
11+	9+	60+
10+	8+	54+
9+	7+	43+
8+	6+	32+
7+	5+	26+
6+	4+	22+
5+	3+	15+
4+	3+	9+
3+	2+	7+
2+	0+	5+
1+	0+	3+
0+	-0+	1+

Table A29. MECHANICAL COMPREHENSION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 MALES

2	5	PERCENTILE
25.	20.	99.
24.	20.	99.
23.	19.	99.
22.	18.	99.
21.	17.	98.
20.	16.	95.
19.	16.	92.
18.	15.	90.
17.	14.	85.
16.	13.	78.
15.	12.	73.
14.	12.	69.
13.	11.	60.
12.	10.	51.
11.	9.	47.
10.	8.	41.
9.	8.	32.
8.	7.	24.
7.	6.	20.
6.	5.	17.
5.	5.	12.
4.	4.	8.
3.	3.	7.
2.	2.	6.
1.	1.	5.
0.	0.	2.

Table A30. MECHANICAL COMPREHENSION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 FEMALES

2	5	PERCENTILE
25.	19.	99.
24.	19.	99.
23.	18.	99.
22.	17.	99.
21.	16.	99.
20.	16.	99.
19.	15.	99.
18.	14.	99.
17.	13.	99.
16.	12.	97.
15.	12.	96.
14.	11.	93.
13.	10.	87.
12.	9.	80.
11.	9.	75.
10.	8.	71.
9.	7.	60.
8.	6.	47.
7.	6.	41.
6.	5.	35.
5.	4.	22.
4.	3.	12.
3.	2.	9.
2.	2.	6.
1.	0.	2.
0.	0.	1.

Table A31. MECHANICAL COMPREHENSION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 MALES

2	5	PERCENTILE
25.	20.	99.
24.	20.	99.
23.	19.	98.
22.	18.	97.
21.	17.	94.
20.	16.	89.
19.	16.	86.
18.	15.	82.
17.	14.	74.
16.	13.	65.
15.	12.	59.
14.	11.	51.
13.	10.	41.
12.	9.	33.
11.	9.	28.
10.	8.	22.
9.	7.	16.
8.	6.	10.
7.	5.	7.
6.	4.	6.
5.	3.	3.
4.	3.	2.
3.	2.	2.
2.	0.	1.
1.	-0.	1.
0.	-0.	1.

Table A32. MECHANICAL COMPREHENSION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 FEMALES

2	5	PERCENTILE
25.	19.	99.
24.	19.	99.
23.	18.	99.
22.	17.	99.
21.	16.	99.
20.	16.	99.
19.	15.	98.
18.	14.	98.
17.	13.	95.
16.	12.	91.
15.	12.	88.
14.	11.	85.
13.	10.	78.
12.	9.	69.
11.	8.	63.
10.	8.	56.
9.	7.	43.
8.	6.	32.
7.	5.	27.
6.	5.	23.
5.	4.	15.
4.	3.	8.
3.	2.	6.
2.	1.	4.
1.	0.	2.
0.	-0.	1.

Table A33. MECHANICAL COMPREHENSION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 MALES

2	5	PERCENTILE
25+	20+	99+
24+	19+	99+
23+	18+	98+
22+	17+	98+
21+	17+	95+
20+	16+	90+
19+	15+	88+
18+	14+	83+
17+	13+	75+
16+	12+	67+
15+	12+	64+
14+	11+	61+
13+	10+	53+
12+	9+	44+
11+	8+	38+
10+	8+	31+
9+	7+	23+
8+	6+	17+
7+	5+	14+
6+	4+	11+
5+	3+	7+
4+	3+	5+
3+	2+	3+
2+	0+	3+
1+	0+	2+
0+	-0+	1+

Table A34. MECHANICAL COMPREHENSION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 FEMALES

2	5	PERCENTILE
25.	17.	99.
24.	17.	99.
23.	16.	99.
22.	15.	99.
21.	15.	99.
20.	14.	99.
19.	13.	99.
18.	13.	97.
17.	12.	95.
16.	11.	92.
15.	11.	90.
14.	10.	87.
13.	9.	81.
12.	9.	74.
11.	8.	68.
10.	7.	62.
9.	7.	51.
8.	6.	39.
7.	5.	31.
6.	4.	25.
5.	4.	16.
4.	3.	10.
3.	2.	8.
2.	2.	6.
1.	1.	3.
0.	0.	1.

Table A35. MECHANICAL COMPREHENSION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADES 10-12, BOTH SEXES

2	5	PERCENTILE
25+	20+	99+
24+	20+	99+
23+	19+	99+
22+	18+	99+
21+	17+	98+
20+	16+	96+
19+	15+	94+
18+	15+	92+
17+	14+	88+
16+	13+	83+
15+	12+	79+
14+	11+	75+
13+	10+	68+
12+	10+	59+
11+	9+	54+
10+	8+	48+
9+	7+	38+
8+	6+	29+
7+	5+	24+
6+	5+	19+
5+	4+	13+
4+	3+	7+
3+	2+	5+
2+	1+	4+
1+	0+	2+
0+	-0+	1+

Table A36. SHOP INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 MALES

2	5	PERCENTILE
25.	20.	99.
24.	20.	99.
23.	20.	99.
22.	20.	99.
21.	19.	98.
20.	18.	96.
19.	17.	93.
18.	16.	91.
17.	15.	86.
16.	14.	77.
15.	13.	71.
14.	12.	65.
13.	11.	56.
12.	11.	47.
11.	10.	41.
10.	9.	35.
9.	8.	27.
8.	7.	19.
7.	6.	16.
6.	5.	13.
5.	4.	8.
4.	3.	6.
3.	2.	5.
2.	1.	4.
1.	0.	2.
0.	-0.	1.

Table A37. SHOP INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 FEMALES

2	5	PERCENTILE
25.	20.	99.
24.	20.	99.
23.	20.	99.
22.	20.	99.
21.	19.	99.
20.	18.	99.
19.	17.	99.
18.	16.	99.
17.	16.	99.
16.	15.	99.
15.	14.	98.
14.	13.	97.
13.	12.	94.
12.	11.	90.
11.	11.	88.
10.	10.	83.
9.	9.	72.
8.	8.	60.
7.	7.	54.
6.	7.	46.
5.	6.	34.
4.	5.	24.
3.	4.	18.
2.	3.	12.
1.	3.	5.
0.	2.	1.

Table A38. SHOP INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 MALES

2	5	PERCENTILE
25+	20+	99+
24+	20+	99+
23+	20+	98+
22+	19+	97+
21+	19+	93+
20+	18+	88+
19+	17+	84+
18+	16+	81+
17+	15+	73+
16+	14+	65+
15+	13+	60+
14+	12+	54+
13+	11+	43+
12+	10+	32+
11+	10+	28+
10+	9+	25+
9+	8+	19+
8+	7+	14+
7+	6+	11+
6+	5+	8+
5+	4+	5+
4+	3+	3+
3+	2+	2+
2+	1+	1+
1+	0+	1+
0+	-0+	1+

Table A39. SHOP INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 FEMALES

2	5	PERCENTILE
25.	20.	99.
24.	20.	99.
23.	20.	99.
22.	20.	99.
21.	19.	99.
20.	18.	99.
19.	18.	99.
18.	17.	99.
17.	16.	98.
16.	15.	97.
15.	14.	96.
14.	13.	94.
13.	13.	90.
12.	12.	83.
11.	11.	79.
10.	10.	72.
9.	9.	61.
8.	8.	48.
7.	8.	39.
6.	7.	32.
5.	6.	22.
4.	5.	14.
3.	4.	10.
2.	3.	7.
1.	3.	3.
0.	2.	1.

Table A40. SHOP INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 MALES

2	5	PERCENTILE
25+	20+	99+
24+	20+	99+
23+	20+	98+
22+	19+	97+
21+	18+	95+
20+	17+	91+
19+	16+	88+
18+	15+	83+
17+	14+	74+
16+	13+	66+
15+	12+	62+
14+	12+	57+
13+	11+	48+
12+	10+	37+
11+	9+	31+
10+	8+	25+
9+	7+	17+
8+	6+	12+
7+	5+	9+
6+	4+	8+
5+	3+	6+
4+	2+	4+
3+	1+	3+
2+	0+	3+
1+	-0+	2+
0+	-2+	1+

Table A41. SHOP INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 FEMALES

2	5	PERCENTILE
25+	20+	99+
24+	20+	99+
23+	20+	99+
22+	20+	99+
21+	19+	99+
20+	19+	99+
19+	18+	99+
18+	17+	99+
17+	16+	99+
16+	15+	98+
15+	14+	98+
14+	13+	95+
13+	13+	90+
12+	12+	86+
11+	11+	83+
10+	10+	79+
9+	9+	68+
8+	8+	55+
7+	7+	47+
6+	6+	42+
5+	6+	31+
4+	5+	20+
3+	4+	15+
2+	3+	10+
1+	2+	5+
0+	1+	2+

Table A42. SHOP INFORMATION: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADES 10-12, BOTH SEXES

2	5	PERCENTILE
25.	20.	99.
24.	20.	99.
23.	20.	99.
22.	19.	99.
21.	18.	98.
20.	18.	96.
19.	17.	95.
18.	16.	93.
17.	15.	89.
16.	14.	85.
15.	14.	82.
14.	13.	79.
13.	12.	72.
12.	11.	65.
11.	10.	60.
10.	9.	55.
9.	9.	46.
8.	8.	36.
7.	7.	31.
6.	6.	26.
5.	5.	18.
4.	5.	12.
3.	4.	9.
2.	3.	6.
1.	2.	3.
0.	1.	1.

TAble A43. WORD KNOWLEDGE: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 MALES

2	5	PERCENTILE
25.	30.	99.
24.	30.	99.
23.	30.	99.
22.	29.	99.
21.	28.	99.
20.	27.	98.
19.	25.	97.
18.	24.	94.
17.	23.	88.
16.	22.	80.
15.	20.	74.
14.	19.	70.
13.	18.	61.
12.	17.	52.
11.	15.	47.
10.	14.	42.
9.	13.	32.
8.	12.	25.
7.	10.	22.
6.	9.	19.
5.	8.	14.
4.	7.	10.
3.	6.	7.
2.	4.	5.
1.	3.	3.
0.	2.	1.

Table A44. WORD KNOWLEDGE: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 FEMALES

2	5	PERCENTILE
25.	30.	99.
24.	30.	99.
23.	29.	99.
22.	28.	99.
21.	27.	99.
20.	26.	98.
19.	24.	97.
18.	23.	96.
17.	22.	91.
16.	21.	83.
15.	20.	79.
14.	18.	75.
13.	17.	69.
12.	16.	61.
11.	15.	57.
10.	14.	51.
9.	12.	39.
8.	11.	30.
7.	10.	26.
6.	9.	22.
5.	8.	15.
4.	7.	10.
3.	5.	8.
2.	4.	6.
1.	3.	4.
0.	2.	1.

Table A45. WORD KNOWLEDGE: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 MALES

2	5	PERCENTILE
25.	30.	99.
24.	30.	99.
23.	30.	99.
22.	29.	99.
21.	28.	97.
20.	26.	92.
19.	25.	89.
18.	24.	85.
17.	23.	76.
16.	22.	63.
15.	20.	55.
14.	19.	50.
13.	18.	40.
12.	17.	32.
11.	16.	27.
10.	14.	24.
9.	13.	18.
8.	12.	13.
7.	11.	10.
6.	10.	9.
5.	9.	7.
4.	7.	5.
3.	6.	4.
2.	5.	3.
1.	4.	2.
0.	3.	1.

Table A46. WORD KNOWLEDGE: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 FEMALES

2	5	PERCENTILE
25.	30.	99.
24.	30.	99.
23.	29.	99.
22.	28.	98.
21.	27.	97.
20.	26.	94.
19.	25.	92.
18.	24.	89.
17.	22.	82.
16.	21.	73.
15.	20.	69.
14.	19.	63.
13.	18.	53.
12.	17.	43.
11.	15.	38.
10.	14.	34.
9.	13.	27.
8.	12.	20.
7.	11.	17.
6.	10.	15.
5.	8.	10.
4.	7.	6.
3.	6.	5.
2.	5.	4.
1.	4.	2.
0.	3.	1.

Table A47. WORD KNOWLEDGE: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 MALES

2	5	PERCENTILE
25.	30.	99.
24.	30.	99.
23.	30.	99.
22.	29.	99.
21.	28.	98.
20.	27.	94.
19.	26.	92.
18.	24.	89.
17.	23.	79.
16.	22.	67.
15.	21.	61.
14.	19.	54.
13.	18.	43.
12.	17.	36.
11.	16.	33.
10.	14.	28.
9.	13.	20.
8.	12.	15.
7.	11.	13.
6.	10.	11.
5.	8.	8.
4.	7.	5.
3.	6.	4.
2.	5.	2.
1.	3.	1.
0.	2.	1.

Table A48. WORD KNOWLEDGE: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 FEMALES

2	5	PERCENTILE
25.	30.	99.
24.	30.	99.
23.	29.	99.
22.	28.	99.
21.	27.	98.
20.	26.	93.
19.	25.	90.
18.	23.	88.
17.	22.	83.
16.	21.	76.
15.	20.	71.
14.	19.	66.
13.	17.	57.
12.	16.	47.
11.	15.	41.
10.	14.	36.
9.	13.	29.
8.	11.	21.
7.	10.	17.
6.	9.	14.
5.	8.	10.
4.	7.	6.
3.	5.	3.
2.	4.	3.
1.	3.	1.
0.	2.	1.

Table A49. WORD KNOWLEDGE: EQUIPERCENTILES FOR FORMS 2 and 5 - GRADES 10-12, BOTH SEXES

2	5	PERCENTILE
25+	30+	99+
24+	30+	99+
23+	30+	99+
22+	28+	99+
21+	27+	98+
20+	26+	95+
19+	25+	93+
18+	24+	90+
17+	22+	83+
16+	21+	73+
15+	20+	68+
14+	19+	63+
13+	18+	54+
12+	16+	45+
11+	15+	40+
10+	14+	35+
9+	13+	27+
8+	12+	21+
7+	11+	17+
6+	9+	15+
5+	8+	10+
4+	7+	7+
3+	6+	5+
2+	5+	4+
1+	3+	2+
0+	2+	1+

APPENDIX B:

Equipercentile Conversion Tables for Composites
EL, GMC, CL, GT and MM

Table B1. ELECTRONICS COMPOSITE (EL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 MALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75.	60.	99.	29.	27.	59.
74.	60.	99.	28.	27.	57.
73.	60.	99.	34.	26.	54.
72.	49.	99.	33.	26.	52.
71.	48.	99.	32.	26.	50.
70.	48.	99.	31.	24.	50.
69.	47.	99.	30.	24.	47.
68.	47.	99.	29.	23.	44.
67.	46.	99.	28.	23.	41.
66.	45.	99.	27.	22.	39.
65.	45.	99.	26.	21.	37.
64.	44.	99.	25.	21.	34.
63.	44.	99.	24.	20.	31.
62.	43.	95.	23.	20.	29.
61.	43.	93.	21.	18.	24.
60.	42.	98.	20.	18.	22.
59.	41.	95.	19.	17.	20.
58.	41.	97.	18.	17.	18.
57.	40.	97.	17.	16.	15.
56.	40.	95.	16.	15.	13.
55.	39.	94.	15.	15.	11.
54.	38.	92.	14.	14.	11.
53.	38.	91.	13.	13.	9.
52.	37.	89.	12.	13.	8.
51.	37.	87.	11.	12.	7.
50.	36.	86.	10.	12.	7.
49.	35.	84.	9.	11.	5.
48.	34.	81.	8.	11.	4.
47.	34.	79.	7.	10.	2.
46.	33.	78.	6.	9.	2.
45.	33.	76.	5.	8.	1.
44.	32.	75.	4.	8.	1.
43.	32.	74.	3.	7.	1.
42.	31.	73.	2.	7.	1.
41.	30.	71.	1.	6.	1.
40.	30.	69.	0.	6.	1.
39.	29.	67.			
38.	29.	64.			
37.	28.	62.			

Table B2. ELECTRONICS COMPOSITE (EL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 FEMALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75.	50.	99.	36.	31.	91.
74.	50.	99.	35.	30.	90.
73.	50.	99.	34.	29.	92.
72.	50.	99.	33.	29.	89.
71.	50.	99.	32.	28.	87.
70.	50.	99.	31.	27.	85.
69.	50.	99.	30.	27.	82.
68.	50.	99.	29.	26.	79.
67.	50.	99.	28.	25.	77.
66.	50.	99.	27.	25.	74.
65.	49.	99.	26.	24.	70.
64.	48.	99.	25.	24.	66.
63.	48.	99.	24.	23.	61.
62.	47.	99.	23.	22.	57.
61.	47.	99.	22.	22.	53.
60.	46.	99.	21.	21.	49.
59.	45.	99.	20.	20.	46.
58.	45.	99.	19.	20.	43.
57.	44.	99.	18.	19.	40.
56.	43.	99.	17.	18.	37.
55.	43.	99.	16.	18.	34.
54.	42.	99.	15.	17.	31.
53.	41.	99.	14.	16.	28.
52.	41.	99.	13.	16.	24.
51.	40.	99.	12.	15.	21.
50.	40.	99.	11.	15.	19.
49.	39.	99.	10.	14.	16.
48.	38.	99.	9.	13.	13.
47.	38.	99.	8.	13.	12.
46.	37.	99.	7.	12.	10.
45.	36.	99.	6.	11.	8.
44.	36.	99.	5.	11.	7.
43.	35.	99.	4.	10.	5.
42.	34.	99.	3.	9.	4.
41.	34.	98.	2.	9.	3.
40.	33.	98.	1.	8.	1.
39.	32.	97.	0.	7.	1.
38.	32.	96.			
37.	31.	95.			

Table B3. ELECTRONICS COMPOSITE (EL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 MALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75.	80.	99.	36.	28.	35.
74.	80.	99.	35.	27.	33.
73.	80.	99.	34.	27.	31.
72.	80.	99.	33.	26.	29.
71.	49.	99.	32.	25.	26.
70.	49.	99.	31.	25.	24.
69.	46.	99.	30.	24.	22.
68.	48.	99.	29.	24.	20.
67.	47.	99.	28.	23.	18.
66.	46.	99.	27.	22.	16.
65.	46.	98.	26.	22.	15.
64.	45.	96.	25.	21.	13.
63.	44.	97.	24.	21.	12.
62.	44.	97.	23.	20.	11.
61.	43.	96.	22.	19.	10.
60.	43.	95.	21.	19.	9.
59.	42.	94.	20.	18.	9.
58.	41.	93.	19.	18.	8.
57.	41.	92.	18.	17.	8.
56.	40.	90.	17.	16.	6.
55.	40.	88.	16.	16.	5.
54.	39.	86.	15.	15.	5.
53.	38.	84.	14.	14.	5.
52.	38.	81.	13.	14.	4.
51.	37.	79.	12.	13.	3.
50.	37.	77.	11.	13.	3.
49.	36.	74.	10.	12.	2.
48.	35.	72.	9.	11.	2.
47.	35.	69.	8.	11.	2.
46.	34.	65.	7.	10.	1.
45.	33.	63.	6.	10.	1.
44.	33.	60.	5.	9.	1.
43.	32.	58.	4.	8.	1.
42.	32.	55.	3.	8.	1.
41.	31.	50.	2.	7.	1.
40.	30.	46.	1.	6.	1.
39.	30.	44.	0.	6.	1.
38.	29.	41.			
37.	29.	38.			

Table B4. ELECTRONICS COMPOSITE (EL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 FEMALES

Form 2	Form 5	Per-centile	Form 2	Form 5	Per-centile
75+	50+	99+	36+	31+	85+
74+	50+	99+	35+	30+	84+
73+	50+	99+	34+	30+	82+
72+	50+	99+	33+	29+	80+
71+	50+	98+	32+	28+	78+
70+	50+	97+	31+	28+	76+
69+	50+	97+	30+	27+	73+
68+	50+	96+	29+	26+	70+
67+	50+	96+	28+	26+	67+
66+	50+	95+	27+	25+	64+
65+	49+	94+	26+	24+	60+
64+	48+	93+	25+	24+	57+
63+	48+	92+	24+	23+	53+
62+	47+	92+	23+	23+	48+
61+	46+	91+	22+	22+	46+
60+	46+	90+	21+	21+	43+
59+	45+	89+	20+	21+	41+
58+	45+	88+	19+	20+	37+
57+	44+	87+	18+	19+	34+
56+	43+	86+	17+	19+	32+
55+	43+	85+	16+	18+	29+
54+	42+	84+	15+	18+	26+
53+	41+	83+	14+	17+	24+
52+	41+	82+	13+	16+	21+
51+	40+	81+	12+	16+	18+
50+	40+	80+	11+	15+	16+
49+	39+	79+	10+	14+	14+
48+	38+	78	9+	14+	12+
47+	38+	77+	8+	13+	10+
46+	37+	76+	7+	13+	8+
45+	36+	75+	6+	12+	6+
44+	36+	74+	5+	11+	5+
43+	35+	73+	4+	11+	4+
42+	35+	72+	3+	10+	4+
41+	34+	71+	2+	9+	3+
40+	33+	70+	1+	9+	3+
39+	33+	69+	0+	8+	2+
38+	32+	68+			1+
37+	31+	67+			

Table B5. ELECTRONICS COMPOSITE (EL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 MALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
76+	60+	99+	36+	27+	42+
74+	60+	99+	35+	26+	40+
73+	49+	99+	34+	25+	39+
72+	45+	99+	33+	25+	37+
71+	42+	99+	32+	24+	35+
70+	47+	99+	31+	24+	32+
69+	47+	99+	30+	23+	30+
68+	46+	98+	29+	22+	28+
67+	46+	98+	28+	22+	26+
66+	45+	99+	27+	21+	24+
65+	44+	97+	26+	21+	22+
64+	44+	96+	25+	20+	20+
63+	43+	94+	24+	19+	18+
62+	42+	93+	23+	19+	17+
61+	42+	92+	22+	18+	15+
60+	41+	90+	21+	17+	14+
59+	41+	8[illegible]+	20+	17+	13+
58+	40+	88+	19+	16+	12+
57+	39+	87+	18+	16+	10+
56+	39+	85+	17+	15+	9+
55+	38+	85+	16+	14+	7+
54+	38+	83+	15+	14+	7+
53+	37+	81+	14+	13+	6+
52+	36+	79+	13+	13+	6+
51+	36+	77+	12+	12+	5+
50+	35+	75+	11+	11+	4+
49+	35+	73+	10+	11+	4+
48+	34+	71+	9+	10+	4+
47+	33+	69+	8+	10+	3+
46+	33+	66+	7+	9+	2+
45+	32+	63+	6+	8+	2+
44+	32+	60+	5+	8+	2+
43+	31+	57+	4+	7+	2+
42+	30+	55+	3+	6+	2+
41+	30+	54+	2+	6+	1+
40+	29+	53+	1+	5+	1+
39+	28+	51+	0+	5+	1+
38+	28+	48+			
37+	27+	45+			

Table B6. ELECTRONICS COMPOSITE (EL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 FEMALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75+	60+	99+	26+	30+	85+
74+	60+	99+	25+	29+	87+
73+	59+	99+	24+	29+	85+
72+	58+	99+	23+	28+	84+
71+	58+	99+	22+	28+	81+
70+	58+	99+	21+	27+	79+
69+	57+	99+	20+	26+	77+
68+	49+	99+	19+	26+	75+
67+	49+	99+	18+	25+	71+
66+	48+	99+	17+	24+	68+
65+	48+	99+	16+	24+	65+
64+	47+	99+	15+	23+	61+
63+	46+	99+	14+	23+	58+
62+	46+	99+	13+	22+	56+
61+	45+	99+	12+	21+	52+
60+	45+	99+	11+	21+	47+
59+	44+	99+	10+	20+	43+
58+	43+	99+	9+	20+	40+
57+	43+	99+	8+	19+	36+
56+	42+	99+	7+	18+	32+
55+	41+	99+	6+	18+	29+
54+	41+	99+	5+	17+	25+
53+	40+	99+	4+	17+	22+
52+	40+	99+	3+	16+	20+
51+	39+	99+	2+	15+	17+
50+	38+	99+	1+	15+	15+
49+	38+	99+	0+	14+	14+
48+	37+	99+		14+	11+
47+	37+	99+		13+	10+
46+	36+	99+		12+	9+
45+	35+	98+		12+	8+
44+	35+	98+		11+	7+
43+	34+	97+		11+	6+
42+	34+	96+		10+	5+
41+	33+	95+		9+	4+
40+	32+	94+		8+	3+
39+	32+	92+		7+	2+
38+	31+	91+		6+	1+
37+	31+	89+			

Table B7. ELECTRONICS COMPOSITE (EL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADES 10-12, BOTH SEXES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75+	50+	9[illegible]+	36+	29+	69+
74+	50+	99+	35+	28+	67+
73+	50+	99+	34+	27+	66+
72+	50+	99+	33+	27+	63+
71+	49+	99+	32+	26+	61+
70+	49+	99+	31+	26+	58+
69+	48+	99+	30+	25+	56+
68+	47+	99+	29+	25+	53+
67+	47+	99+	28+	24+	51+
66+	46+	99+	27+	23+	48+
65+	46+	99+	26+	23+	45+
64+	45+	99+	25+	22+	42+
63+	44+	99+	24+	22+	39+
62+	44+	98+	23+	21+	37+
61+	43+	98+	22+	20+	34+
60+	43+	98+	21+	20+	32+
59+	42+	97+	20+	19+	29+
58+	41+	97+	19+	19+	27+
57+	41+	96+	18+	18+	25+
56+	40+	95+	17+	18+	22+
55+	40+	95+	16+	17+	20+
54+	39+	94+	15+	16+	18+
53+	39+	93+	14+	16+	16+
52+	38+	92+	13+	15+	14+
51+	37+	91+	12+	15+	12+
50+	37+	90+	11+	14+	11+
49+	36+	89+	10+	13+	9+
48+	36+	88+	9+	13+	8+
47+	35+	87+	8+	12+	6+
46+	34+	86+	7+	12+	5+
45+	34+	84+	6+	11+	4+
44+	33+	83+	5+	11+	4+
43+	33+	82+	4+	10+	3+
42+	32+	80+	3+	9+	3+
41+	32+	78+	2+	9+	2+
40+	31+	77+	1+	8+	2+
39+	30+	75+	0+	8+	1+
38+	30+	73+			
37+	29+	71+			

Table B8. GENERAL MECHANICS COMPOSITE (GMC): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 MALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75.	59.	99.	36.	31.	47.
74.	59.	99.	35.	30.	44.
73.	58.	99.	34.	30.	41.
72.	57.	59.	33.	29.	39.
71.	56.	99.	32.	28.	33.
	56.	99.	31.	27.	30.
	55.	99.	30.	27.	28.
66.	54.	99.	29.	26.	27.
67.	54.	59.	28.	25.	26.
66.	53.	99.	27.	24.	25.
65.	52.	59.	26.	24.	24.
64.	51.	99.	25.	23.	22.
63.	51.	98.	24.	22.	20.
62.	50.	97.	23.	21.	18.
61.	49.	96.	22.	21.	15.
60.	48.	95.	21.	20.	13.
59.	48.	95.	20.	19.	11.
58.	47.	93.	19.	19.	10.
57.	46.	92.	18.	18.	5.
56.	45.	91.	17.	17.	7.
55.	45.	90.	16.	16.	6.
54.	44.	89.	15.	16.	5.
53.	43.	87.	14.	15.	5.
52.	43.	84.	13.	14.	4.
51.	42.	82.	12.	13.	3.
50.	41.	80.	11.	13.	3.
49.	40.	78.	10.	12.	3.
48.	40.	75.	9.	11.	2.
47.	39.	73.	8.	11.	2.
46.	38.	70.	7.	10.	1.
45.	38.	66.	6.	9.	1.
44.	37.	64.	5.	8.	1.
43.	36.	62.	4.	8.	1.
42.	35.	60.	3.	7.	1.
41.	35.	59.	2.	6.	1.
40.	34.	56.	1.	5.	1.
39.	33.	55.	0.	5.	1.
38.	32.	53.			
37.	32.	51.			

Table B9. GENERAL MECHANICS COMPOSITE (GMC): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 FEMALE

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75.	60.	99.	36.	33.	84.
74.	60.	99.	35.	33.	82.
73.	60.	99.	34.	32.	79.
72.	59.	99.	33.	31.	75.
71.	59.	99.	32.	30.	73.
70.	58.	99.	31.	30.	71.
69.	57.	99.	30.	29.	68.
68.	56.	99.	29.	28.	64.
67.	56.	99.	28.	28.	62.
66.	55.	99.	27.	27.	58.
65.	54.	99.	26.	26.	54.
64.	54.	99.	25.	25.	50.
63.	53.	99.	24.	25.	46.
62.	52.	98.	23.	24.	43.
61.	51.	99.	22.	23.	40.
60.	51.	99.	21.	23.	37.
59.	50.	99.	20.	22.	34.
58.	49.	99.	19.	21.	31.
57.	48.	99.	18.	20.	28.
56.	48.	99.	17.	20.	24.
55.	47.	99.	16.	19.	20.
54.	46.	99.	15.	18.	17.
53.	46.	99.	14.	18.	15.
52.	45.	99.	13.	17.	12.
51.	44.	99.	12.	16.	10.
50.	43.	99.	11.	15.	8.
49.	43.	99.	10.	15.	7.
48.	42.	98.	9.	14.	6.
47.	41.	98.	8.	13.	4.
46.	41.	97.	7.	13.	3.
45.	40.	97.	6.	12.	2.
44.	39.	96.	5.	11.	2.
43.	38.	96.	4.	10.	1.
42.	38.	94.	3.	10.	1.
41.	37.	92.	2.	9.	1.
40.	36.	90.	1.	8.	1.
39.	36.	89.	0.	7.	1.
38.	35.	88.			
37.	34.	86.			

Table B10. GENERAL MECHANICS COMPOSITE (GMC): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 MALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75.	59.	99.	36.	32.	30.
[illegible]	59.	99.	35.	31.	26.
73.	58.	99.	34.	30.	26.
72.	57.	99.	33.	30.	23.
71.	56.	99.	32.	29.	21.
70.	56.	99.	31.	28.	19.
69.	55.	99.	30.	27.	17.
68.	54.	98.	29.	27.	16.
67.	54.	98.	28.	26.	15.
66.	53.	97.	27.	25.	14.
65.	52.	96.	26.	25.	13.
64.	52.	94.	25.	24.	11.
63.	51.	94.	24.	23.	9.
62.	50.	93.	23.	23.	8.
61.	49.	91.	22.	22.	7.
60.	49.	90.	21.	21.	5.
59.	48.	89.	20.	20.	4.
58.	47.	88.	19.	20.	3.
57.	47.	86.	18.	19.	3.
56.	46.	84.	17.	18.	3.
55.	45.	82.	16.	18.	3.
54.	44.	80.	15.	17.	2.
53.	44.	78.	14.	16.	2.
52.	43.	74.	13.	15.	1.
51.	42.	72.	12.	15.	1.
50.	42.	71.	11.	14.	1.
49.	41.	68.	10.	13.	1.
48.	40.	64.	9.	13.	1.
47.	39.	62.	8.	12.	1.
46.	39.	59.	7.	11.	1.
45.	38.	56.	6.	11.	1.
44.	37.	53.	5.	10.	1.
43.	37.	49.	4.	9.	1.
42.	36.	46.	3.	8.	1.
41.	35.	43.	2.	8.	1.
40.	35.	40.	1.	7.	1.
39.	34.	38.	0.	6.	1.
38.	33.	36.			
37.	32.	33.			

Table B11. GENERAL MECHANICS COMPOSITE (GMC): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 FEMALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75.	60.	99.	36.	34.	73.
74.	60.	99.	35.	33.	71.
73.	59.	99.	34.	32.	68.
72.	58.	99.	33.	31.	64.
71.	56.	99.	32.	31.	60.
70.	57.	99.	31.	30.	55.
69.	56.	99.	30.	29.	52.
68.	56.	99.	29.	29.	49.
67.	55.	99.	28.	28.	45.
66.	54.	99.	27.	27.	40.
65.	54.	99.	26.	27.	38.
64.	53.	99.	25.	26.	36.
63.	52.	99.	24.	25.	32.
62.	52.	99.	23.	24.	30.
61.	51.	99.	22.	24.	27.
60.	50.	99.	21.	23.	24.
59.	49.	99.	20.	22.	21.
58.	49.	99.	19.	22.	19.
57.	48.	99.	18.	21.	16.
56.	47.	98.	17.	20.	13.
55.	47.	98.	16.	20.	11.
54.	46.	98.	15.	19.	10.
53.	45.	98.	14.	18.	9.
52.	45.	97.	13.	18.	8.
51.	44.	97.	12.	17.	6.
50.	42.	96.	11.	16.	5.
49.	43.	96.	10.	15.	5.
48.	42.	95.	9.	15.	4.
47.	41.	94.	8.	14.	3.
46.	40.	93.	7.	13.	3.
45.	40.	91.	6.	13.	2.
44.	39.	90.	5.	12.	2.
43.	38.	89.	4.	11.	1.
42.	38.	87.	3.	11.	1.
41.	37.	85.	2.	10.	1.
40.	36.	83.	1.	9.	1.
39.	36.	81.	0.	9.	1.
38.	35.	79.			
37.	34.	76.			

Table B12. GENERAL MECHANICS COMPOSITE (GMC): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 MALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75+	58+	99+	36+	31+	33+
74+	58+	99+	35+	30+	31+
73+	57+	99+	34+	29+	30+
72+	56+	99+	33+	29+	28+
71+	55+	99+	32+	28+	27+
70+	55+	99+	31+	27+	25+
69+	54+	99+	30+	27+	23+
68+	53+	98+	29+	26+	19+
67+	53+	98+	28+	25+	17+
66+	52+	98+	27+	25+	15+
65+	51+	98+	26+	24+	13+
64+	51+	97+	25+	23+	12+
63+	50+	96+	24+	22+	10+
62+	49+	95+	23+	22+	9+
61+	48+	93+	22+	21+	7+
60+	48+	92+	21+	20+	7+
59+	47+	91+	20+	20+	7+
58+	46+	89+	19+	19+	6+
57+	46+	88+	18+	18+	6+
56+	45+	84+	17+	17+	6+
55+	44+	83+	16+	17+	5+
54+	43+	81+	15+	16+	5+
53+	43+	79+	14+	15+	4+
52+	42+	77+	13+	15+	4+
51+	41+	75+	12+	14+	3+
50+	41+	74+	11+	13+	3+
49+	40+	73+	10+	13+	2+
48+	39+	70+	9+	12+	2+
47+	38+	67+	8+	11+	2+
46+	38+	63+	7+	10+	2+
45+	37+	59+	6+	10+	2+
44+	36+	55+	5+	9+	2+
43+	36+	51+	4+	8+	2+
42+	35+	48+	3+	8+	2+
41+	34+	45+	2+	7+	2+
40+	34+	41+	1+	6+	2+
39+	33+	39+	0+	6+	1+
38+	32+	37+			
37+	32+	35+			

Table B13. GENERAL MECHANICS COMPOSITE (GMC): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 FEMALES

Form 2	Form 5	Per-centile	Form 2	Form 5	Per-centile
76+	63+	99+	36+	34+	79+
74+	60+	99+	35+	34+	76+
73+	60+	99+	34+	33+	74+
72+	60+	99+	33+	32+	71+
71+	60+	99+	32+	31+	68+
70+	60+	99+	31+	31+	65+
69+	59+	99+	30+	30+	61+
68+	58+	99+	29+	29+	57+
67+	57+	99+	28+	28+	53+
66+	57+	99+	27+	28+	50+
65+	56+	99+	26+	27+	47+
64+	55+	99+	25+	26+	43+
63+	55+	99+	24+	25+	40+
62+	54+	99+	23+	25+	38+
61+	53+	99+	22+	24+	35+
60+	52+	99+	21+	23+	32+
59+	52+	99+	20+	23+	29+
58+	51+	99+	19+	22+	26+
57+	50+	99+	18+	21+	25+
56+	49+	99+	17+	20+	22+
55+	49+	99+	16+	20+	19+
54+	48+	99+	15+	19+	17+
53+	47+	99+	14+	18+	14+
52+	46+	98+	13+	17+	10+
51+	46+	98+	12+	17+	8+
50+	45+	98+	11+	16+	7+
49+	44+	97+	10+	15+	6+
48+	43+	96+	9+	14+	5+
47+	43+	96+	8+	14+	4+
46+	42+	95+	7+	13+	3+
45+	41+	93+	6+	12+	3+
44+	40+	92+	5+	11+	2+
43+	40+	91+	4+	11+	2+
42+	39+	90+	3+	10+	1+
41+	38+	88+	2+	9+	1+
40+	37+	86+	1+	8+	1+
39+	37+	85+	0+	8+	1+
38+	36+	83+			
37+	35+	82+			

68

Table B14. GENERAL MECHANICS COMPOSITE (GMC): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADES 10-12, BOTH SEXES

Form 2	Form 5	Percentile
75+	60+	99+
74+	59+	99+
73+	58+	97+
72+	58+	99+
71+	57+	99+
70+	56+	99+
69+	56+	99+
68+	55+	99+
67+	54+	99+
66+	53+	99+
65+	53+	99+
64+	52+	99+
63+	51+	99+
62+	51+	98+
61+	50+	97+
60+	49+	96+
59+	48+	96+
58+	46+	95+
57+	47+	94+
56+	46+	93+
55+	46+	93+
54+	45+	92+
53+	44+	91+
52+	44+	89+
51+	43+	88+
50+	42+	87+
49+	42+	86+
48+	41+	84+
47+	40+	83+
46+	39+	81+
45+	39+	79+
44+	38+	76+
43+	37+	74+
42+	37+	72+
41+	36+	70+
40+	35+	68+
39+	35+	66+
38+	34+	64+
37+	33+	62+
36+	33+	59+
35+	32+	57+
34+	31+	54+
33+	30+	51+
32+	30+	48+
31+	29+	45+
30+	28+	43+
29+	28+	40+
28+	27+	37+
27+	26+	34+
26+	26+	32+
25+	25+	30+
24+	24+	27+
23+	23+	25+
22+	23+	22+
21+	22+	20+
20+	21+	18+
19+	21+	16+
18+	20+	14+
17+	19+	12+
16+	19+	11+
15+	18+	10+
14+	17+	8+
13+	16+	7+
12+	15+	5+
11+	15+	4+
10+	14+	4+
9+	14+	3+
8+	13+	3+
7+	12+	2+
6+	12+	2+
5+	11+	1+
4+	10+	1+
3+	9+	1+
2+	9+	1+
1+	8+	1+
0+	7+	1+

Table B15.

CLERICAL ADMINISTRATIVE COMPOSITE (CL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 MALES

2	5	PERCENTILE
88+	110+	99+
87+	110+	99+
86+	110+	99+
85+	110+	99+
84+	110+	98+
83+	110+	99+
82+	109+	99+
81+	107+	99+
80+	105+	99+
79+	103+	99+
78+	101+	99+
77+	99+	99+
76+	97+	99+
75+	95+	99+
74+	93+	99+
73+	91+	99+
72+	89+	99+
71+	87+	99+
70+	85+	99+
69+	83+	97+
68+	81+	96+
67+	79+	95+
66+	77+	95+
65+	75+	92+
64+	73+	89+
63+	72+	86+
62+	70+	83+
61+	68+	79+
60+	66+	76+
59+	64+	73+
58+	62+	68+
57+	60+	63+
56+	58+	57+
55+	56+	51+
54+	54+	46+
53+	52+	40+
52+	50+	35+
51+	48+	32+
50+	46+	30+
49+	44+	27+
48+	42+	23+
47+	40+	20+
46+	38+	18+
45+	36+	15+
44+	34+	12+
43+	32+	9+
42+	30+	7+
41+	28+	6+
40+	27+	4+
39+	25+	3+
38+	23+	3+
37+	21+	2+
36+	19+	1+
35+	17+	1+
34+	15+	1+
33+	13+	1+
32+	11+	1+
31+	9+	1+
30+	7+	1+

Table B16.

CLERICAL ADMINISTRATIVE COMPOSITE (CL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 FEMALES

2	5	PERCENTILE
58+	110+	99+
57+	110+	99+
56+	110+	99+
55+	110+	99+
54+	109+	99+
53+	107+	99+
52+	105+	99+
51+	104+	99+
50+	102+	99+
49+	100+	99+
48+	98+	99+
47+	96+	99+
46+	94+	99+
45+	93+	99+
44+	91+	99+
43+	89+	99+
42+	87+	99+
41+	85+	99+
40+	83+	98+
39+	82+	97+
38+	80+	97+
37+	78+	95+
36+	76+	92+
35+	74+	89+
34+	72+	86+
33+	71+	83+
32+	69+	80+
31+	67+	76+
30+	65+	71+
29+	63+	66+
28+	62+	63+
27+	60+	58+
26+	58+	52+
25+	56+	46+
24+	54+	40+
23+	52+	34+
22+	51+	29+
21+	49+	25+
20+	47+	23+
19+	45+	20+
18+	43+	17+
17+	41+	14+
16+	40+	12+
15+	38+	9+
14+	36+	8+
13+	34+	7+
12+	32+	6+
11+	31+	4+
10+	29+	3+
9+	27+	2+
8+	25+	2+
7+	23+	1+
6+	21+	1+
5+	20+	1+
4+	18+	1+
3+	16+	1+
2+	14+	1+
1+	12+	1+
0+	10+	1+

Table B17.

CLERICAL ADMINISTRATIVE COMPOSITE (CL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 MALES

2	5	PERCENTILE
58.	110.	99.
57.	110.	99.
56.	110.	99.
55.	110.	99.
54.	110.	99.
53.	110.	99.
52.	110.	99.
51.	110.	99.
50.	110.	99.
49.	108.	99.
48.	106.	99.
47.	104.	99.
46.	102.	99.
45.	100.	99.
44.	98.	99.
43.	96.	99.
42.	94.	99.
41.	92.	97.
40.	90.	95.
39.	88.	93.
38.	86.	89.
37.	84.	87.
36.	82.	84.
35.	80.	81.
34.	78.	76.
33.	76.	70.
32.	74.	63.
31.	72.	56.
30.	70.	51.
29.	68.	46.
28.	66.	40.
27.	64.	34.
26.	62.	29.
25.	60.	25.
24.	58.	22.
23.	56.	19.
22.	54.	15.
21.	52.	12.
20.	50.	10.
19.	48.	8.
18.	46.	7.
17.	44.	7.
16.	42.	5.
15.	40.	4.
14.	38.	3.
13.	36.	2.
12.	34.	2.
11.	32.	1.
10.	30.	1.
9.	28.	1.
8.	26.	1.
7.	25.	1.
6.	23.	1.
5.	21.	1.
4.	19.	1.
3.	17.	1.
2.	15.	1.
1.	13.	1.
0.	11.	1.

Table B18.

CLERICAL ADMINISTRATIVE COMPOSITE (CL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 FEMALES

2	5	PERCENTILE
58+	110+	99+
57+	110+	99+
56+	110+	99+
55+	110+	99+
54+	110+	99+
53+	110+	99+
52+	109+	99+
51+	107+	99+
50+	105+	99+
49+	103+	99+
48+	101+	99+
47+	100+	99+
46+	98+	99+
45+	96+	98+
44+	94+	97+
43+	92+	97+
42+	90+	96+
41+	88+	94+
40+	87+	92+
39+	85+	90+
38+	83+	87+
37+	81+	84+
36+	79+	80+
35+	77+	77+
34+	75+	72+
33+	73+	67+
32+	72+	62+
31+	70+	57+
30+	68+	51+
29+	66+	45+
28+	64+	40+
27+	62+	35+
26+	60+	31+
25+	59+	28+
24+	57+	25+
23+	55+	21+
22+	53+	18+
21+	51+	15+
20+	49+	12+
19+	47+	10+
18+	45+	8+
17+	44+	6+
16+	42+	5+
15+	40+	3+
14+	38+	2+
13+	36+	2+
12+	34+	1+
11+	32+	1+
10+	31+	1+
9+	29+	1+
8+	27+	1+
7+	25+	1+
6+	23+	1+
5+	21+	1+
4+	19+	1+
3+	17+	1+
2+	16+	1+
1+	14+	1+
0+	12+	1+

Table B19.

CLERICAL ADMINISTRATIVE COMPOSITE (CL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 MALES

2	5	PERCENTILE
58	110	99
57	110	99
56	110	99
55	110	99
54	110	99
53	110	99
52	110	99
51	110	99
50	108	99
49	106	99
48	104	99
47	102	99
46	100	99
45	98	99
44	96	99
43	94	99
42	92	99
41	90	98
40	88	98
39	86	96
38	84	92
37	82	89
36	80	86
35	78	82
34	76	78
33	74	73
32	72	67
31	70	61
30	68	56
29	66	52
28	64	47
27	63	41
26	61	35
25	59	31
24	57	27
23	55	24
22	53	22
21	51	19
20	49	17
19	47	14
18	45	12
17	43	11
16	41	10
15	39	8
14	37	5
13	35	3
12	33	2
11	31	2
10	29	2
9	27	2
8	25	1
7	23	1
6	21	1
5	19	1
4	17	1
3	15	1
2	13	1
1	11	1
0	9	1

Table B20.

CLERICAL ADMINISTRATIVE COMPOSITE (CL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 FEMALES

2	5	PERCENTILE
58+	110+	99+
57+	110+	99+
56+	110+	99+
55+	105+	95+
54+	108+	99+
53+	106+	99+
52+	104+	99+
51+	102+	99+
50+	100+	99+
49+	99+	99+
48+	97+	99+
47+	95+	99+
46+	93+	99+
45+	91+	95+
44+	90+	99+
43+	88+	98+
42+	86+	97+
41+	84+	94+
40+	82+	92+
39+	81+	90+
38+	79+	88+
37+	77+	86+
36+	75+	83+
35+	73+	79+
34+	72+	74+
33+	70+	69+
32+	68+	65+
31+	66+	60+
30+	64+	55+
29+	63+	49+
28+	61+	44+
27+	59+	39+
26+	57+	33+
25+	55+	29+
24+	54+	24+
23+	52+	20+
22+	50+	17+
21+	48+	15+
20+	47+	13+
19+	45+	11+
18+	43+	9+
17+	41+	7+
16+	39+	6+
15+	38+	5+
14+	36+	3+
13+	34+	2+
12+	32+	2+
11+	30+	1+
10+	29+	1+
9+	27+	1+
8+	25+	1+
7+	23+	1+
6+	21+	1+
5+	20+	1+
4+	18+	1+
3+	16+	1+
2+	14+	1+
1+	12+	1+
0+	11+	1+

Table B21.

CLERICAL ADMINISTRATIVE COMPOSITE (CL): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADES 10-12, BOTH SEXES

2	5	PERCENTILE
58+	110+	99+
57+	110+	99+
56+	110+	99+
55+	110+	99+
54+	110+	99+
53+	110+	99+
52+	110+	99+
51+	109+	99+
50+	107+	99+
49+	105+	99+
48+	103+	99+
47+	101+	99+
46+	99+	99+
45+	97+	99+
44+	95+	99+
43+	93+	98+
42+	91+	96+
41+	89+	96+
40+	87+	95+
39+	85+	93+
38+	83+	91+
37+	81+	89+
36+	79+	86+
35+	77+	82+
34+	75+	78+
33+	73+	74+
32+	71+	69+
31+	69+	64+
30+	67+	59+
29+	65+	54+
28+	63+	49+
27+	61+	44+
26+	59+	38+
25+	57+	34+
24+	55+	29+
23+	53+	26+
22+	51+	22+
21+	49+	19+
20+	48+	16+
19+	46+	14+
18+	44+	12+
17+	42+	10+
16+	40+	9+
15+	38+	7+
14+	36+	5+
13+	34+	4+
12+	32+	3+
11+	30+	2+
10+	28+	2+
9+	26+	1+
8+	24+	1+
7+	22+	1+
6+	20+	1+
5+	18+	1+
4+	16+	1+
3+	14+	1+
2+	12+	1+
1+	10+	1+
0+	8+	1+

Table B22. GENERAL TECHNICAL COMPOSITE (GT): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 MALES

2	5	PERCENTILE
50.	50.	99.
49.	50.	99.
48.	50.	99.
47.	50.	99.
46.	49.	99.
45.	48.	99.
44.	47.	99.
43.	46.	99.
42.	45.	98.
41.	44.	97.
40.	43.	96.
39.	42.	95.
38.	41.	94.
37.	40.	94.
36.	39.	93.
35.	38.	92.
34.	37.	89.
33.	36.	87.
32.	36.	84.
31.	35.	83.
30.	34.	81.
29.	33.	79.
28.	32.	75.
27.	31.	71.
26.	30.	67.
25.	29.	62.
24.	28.	58.
23.	27.	54.
22.	26.	51.
21.	25.	47.
20.	24.	44.
19.	23.	41.
18.	22.	37.
17.	21.	32.
16.	21.	29.
15.	20.	27.
14.	19.	24.
13.	18.	21.
12.	17.	18.
11.	16.	16.
10.	15.	15.
9.	14.	13.
8.	13.	10.
7.	12.	9.
6.	11.	7.
5.	10.	6.
4.	9.	5.
3.	8.	5.
2.	7.	4.
1.	7.	3.
0.	6.	1.

Table B23. GENERAL TECHNICAL COMPOSITE (GT): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 FEMALES

2	5	PERCENTILE
50+	50+	99+
49+	50+	99+
48+	49+	99+
47+	48+	99+
46+	47+	99+
45+	46+	99+
44+	45+	99+
43+	44+	99+
42+	43+	99+
41+	42+	99+
40+	42+	99+
39+	41+	99+
38+	40+	98+
37+	39+	98+
36+	38+	97+
35+	37+	97+
34+	36+	95+
33+	35+	93+
32+	34+	90+
31+	33+	88+
30+	33+	87+
29+	32+	85+
28+	31+	82+
27+	30+	80+
26+	29+	76+
25+	28+	72+
24+	27+	68+
23+	26+	66+
22+	25+	63+
21+	24+	59+
20+	24+	56+
19+	23+	51+
18+	22+	47+
17+	21+	43+
16+	20+	39+
15+	19+	35+
14+	18+	29+
13+	17+	24+
12+	16+	21+
11+	16+	18+
10+	15+	15+
9+	14+	13+
8+	13+	11+
7+	12+	10+
6+	11+	8+
5+	10+	6+
4+	9+	5+
3+	8+	4+
2+	7+	3+
1+	7+	2+
0+	6+	1+

Table B24. GENERAL TECHNICAL COMPOSITE (GT): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 MALES

2	5	PERCENTILE
50.	50.	99.
49.	50.	99.
48.	50.	99.
47.	49.	99.
46.	48.	99.
45.	48.	98.
44.	47.	98.
43.	46.	97.
42.	45.	97.
41.	44.	95.
40.	43.	92.
39.	42.	90.
38.	41.	88.
37.	40.	85.
36.	39.	82.
35.	39.	78.
34.	38.	74.
33.	37.	70.
32.	36.	67.
31.	35.	65.
30.	34.	61.
29.	33.	57.
28.	32.	53.
27.	31.	50.
26.	30.	46.
25.	30.	43.
24.	29.	38.
23.	28.	34.
22.	27.	31.
21.	26.	27.
20.	25.	24.
19.	24.	22.
18.	23.	18.
17.	22.	14.
16.	22.	13.
15.	21.	11.
14.	20.	10.
13.	19.	9.
12.	18.	8.
11.	17.	8.
10.	16.	6.
9.	15.	5.
8.	14.	4.
7.	13.	4.
6.	13.	3.
5.	12.	2.
4.	11.	1.
3.	10.	1.
2.	9.	1.
1.	8.	1.
0.	7.	1.

Table B25. GENERAL TECHNICAL COMPOSITE (GT): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 FEMALES

2	5	PERCENTILE
50+	50+	99+
49+	50+	99+
48+	50+	99+
47+	50+	99+
46+	49+	99+
45+	48+	99+
44+	47+	99+
43+	46+	99+
42+	45+	99+
41+	44+	98+
40+	43+	97+
39+	42+	96+
38+	41+	94+
37+	40+	92+
36+	39+	90+
35+	38+	88+
34+	38+	86+
33+	37+	84+
32+	36+	82+
31+	35+	79+
30+	34+	76+
29+	33+	74+
28+	32+	71+
27+	31+	68+
26+	30+	64+
25+	29+	59+
24+	28+	54+
23+	27+	49+
22+	26+	44+
21+	25+	39+
20+	24+	35+
19+	23+	32+
18+	22+	28+
17+	21+	25+
16+	20+	23+
15+	19+	21+
14+	19+	18+
13+	18+	15+
12+	17+	13+
11+	16+	11+
10+	15+	9+
9+	14+	7+
8+	13+	6+
7+	12+	5+
6+	11+	4+
5+	10+	2+
4+	9+	2+
3+	8+	1+
2+	7+	1+
1+	6+	1+
0+	6+	1+

Table B26. GENERAL TECHNICAL COMPOSITE (GT): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 MALES

2	5	PERCENTILE
50+	50+	99+
49+	50+	99+
48+	50+	99+
47+	50+	99+
46+	50+	99+
45+	49+	99+
44+	48+	98+
43+	47+	97+
42+	46+	96+
41+	45+	94+
40+	44+	94+
39+	43+	93+
38+	42+	91+
37+	41+	90+
36+	40+	88+
35+	39+	86+
34+	38+	82+
33+	37+	77+
32+	36+	74+
31+	35+	71+
30+	34+	67+
29+	33+	63+
28+	32+	60+
27+	31+	57+
26+	30+	52+
25+	29+	47+
24+	28+	43+
23+	27+	38+
22+	26+	35+
21+	25+	32+
20+	24+	28+
19+	23+	24+
18+	22+	20+
17+	21+	18+
16+	20+	16+
15+	19+	15+
14+	18+	13+
13+	18+	11+
12+	17+	10+
11+	16+	8+
10+	15+	6+
9+	14+	6+
8+	13+	4+
7+	12+	3+
6+	11+	2+
5+	10+	2+
4+	9+	1+
3+	8+	1+
2+	7+	1+
1+	6+	1+
0+	5+	1+

Table B27. GENERAL TECHNICAL COMPOSITE (GT): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 FEMALES

2	5	PERCENTILE
50+	50+	99+
49+	50+	99+
48+	50+	99+
47+	50+	99+
46+	49+	99+
45+	48+	99+
44+	47+	99+
43+	46+	99+
42+	46+	99+
41+	44+	98+
40+	43+	97+
39+	43+	96+
38+	42+	95+
37+	41+	94+
36+	40+	93+
35+	39+	92+
34+	38+	90+
33+	37+	87+
32+	36+	84+
31+	35+	82+
30+	34+	80+
29+	33+	79+
28+	32+	76+
27+	31+	72+
26+	30+	68+
25+	29+	64+
24+	28+	59+
23+	27+	55+
22+	26+	52+
21+	25+	48+
20+	24+	44+
19+	23+	40+
18+	22+	36+
17+	22+	32+
16+	21+	28+
15+	20+	24+
14+	19+	20+
13+	18+	16+
12+	17+	13+
11+	16+	12+
10+	15+	10+
9+	14+	8+
8+	13+	6+
7+	12+	5+
6+	11+	4+
5+	10+	3+
4+	9+	2+
3+	8+	2+
2+	7+	1+
1+	6+	1+
0+	5+	1+

Table B28. GENERAL TECHNICAL COMPOSITE (GT): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADES 10-12, BOTH SEXES

2	5	PERCENTILE
50.	50.	99.
49.	50.	99.
48.	50.	99.
47.	50.	99.
46.	49.	99.
45.	48.	99.
44.	47.	99.
43.	46.	99.
42.	45.	98.
41.	44.	97.
40.	43.	96.
39.	42.	95.
38.	41.	93.
37.	40.	92.
36.	39.	90.
35.	39.	88.
34.	38.	86.
33.	37.	83.
32.	36.	80.
31.	35.	78.
30.	34.	75.
29.	33.	72.
28.	32.	70.
27.	31.	66.
26.	30.	62.
25.	29.	58.
24.	28.	53.
23.	27.	49.
22.	26.	46.
21.	25.	41.
20.	24.	38.
19.	23.	35.
18.	22.	31.
17.	22.	27.
16.	21.	24.
15.	20.	22.
14.	19.	19.
13.	18.	16.
12.	17.	14.
11.	16.	12.
10.	15.	10.
9.	14.	8.
8.	13.	7.
7.	12.	6.
6.	11.	5.
5.	10.	3.
4.	9.	3.
3.	8.	2.
2.	7.	2.
1.	6.	1.
0.	6.	1.

Table B29. MOTOR MECHANICS COMPOSITE (MM): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 MALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75.	60.	99.	36.	31.	54.
74.	60.	99.	35.	30.	52.
73.	60.	99.	34.	30.	50.
72.	59.	99.	33.	29.	47.
71.	58.	99.	32.	28.	45.
70.	57.	99.	31.	27.	43.
69.	57.	99.	30.	27.	40.
68.	56.	99.	29.	26.	36.
67.	55.	99.	28.	25.	32.
66.	54.	99.	27.	24.	29.
65.	53.	99.	26.	23.	27.
64.	53.	99.	25.	23.	25.
63.	52.	99.	24.	22.	23.
62.	51.	98.	23.	21.	21.
61.	50.	98.	22.	20.	18.
60.	50.	98.	21.	20.	16.
59.	49.	97.	20.	19.	14.
58.	48.	97.	19.	18.	12.
57.	47.	96.	18.	17.	11.
56.	47.	95.	17.	17.	10.
55.	46.	94.	16.	16.	8.
54.	45.	92.	15.	15.	7.
53.	44.	91.	14.	14.	7.
52.	43.	90.	13.	13.	6.
51.	43.	89.	12.	13.	6.
50.	42.	88.	11.	12.	6.
49.	41.	86.	10.	11.	5.
48.	40.	84.	9.	10.	5.
47.	40.	82.	8.	10.	4.
46.	39.	80.	7.	9.	3.
45.	38.	78.	6.	8.	3.
44.	37.	77.	5.	7.	2.
43.	37.	75.	4.	7.	2.
42.	36.	72.	3.	6.	2.
41.	35.	69.	2.	5.	2.
40.	34.	67.	1.	4.	1.
39.	33.	64.	0.	3.	1.
38.	33.	60.			
37.	32.	56.			

Table B30. MOTOR MECHANICS COMPOSITE (MM): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 10 FEMALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75.	60.	99.	36.	34.	92.
74.	60.	99.	35.	33.	89.
73.	60.	99.	34.	32.	87.
72.	60.	99.	33.	31.	84.
71.	60.	99.	32.	31.	79.
70.	60.	99.	31.	30.	76.
69.	60.	99.	30.	29.	73.
68.	60.	99.	29.	28.	69.
67.	60.	98.	28.	27.	66.
66.	59.	98.	27.	27.	64.
65.	58.	98.	26.	26.	59.
64.	57.	98.	25.	25.	53.
63.	56.	98.	24.	24.	48.
62.	55.	98.	23.	23.	43.
61.	55.	98.	22.	22.	40.
60.	54.	98.	21.	22.	37.
59.	53.	98.	20.	21.	35.
58.	52.	98.	19.	20.	33.
57.	51.	98.	18.	19.	30.
56.	51.	95.	17.	18.	28.
55.	50.	98.	16.	17.	26.
54.	49.	98.	15.	17.	22.
53.	48.	98.	14.	16.	19.
52.	47.	95.	13.	15.	16.
51.	46.	98.	12.	14.	13.
50.	46.	98.	11.	13.	11.
49.	45.	98.	10.	12.	9.
48.	44.	98.	9.	12.	7.
47.	43.	98.	8.	11.	6.
46.	42.	98.	7.	10.	5.
45.	41.	98.	6.	9.	4.
44.	41.	98.	5.	8.	3.
43.	40.	98.	4.	7.	2.
42.	39.	98.	3.	7.	2.
41.	38.	98.	2.	6.	1.
40.	37.	98.	1.	5.	1.
39.	36.	97.	0.	4.	1.
38.	36.	96.			
37.	35.	95.			

Table B31. MOTOR MECHANICS COMPOSITE (MM): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 MALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75.	60.	99.	34.	31.	34.
74.	60.	99.	35.	30.	31.
73.	60.	99.	34.	29.	28.
72.	59.	95.	33.	29.	25.
71.	58.	99.	32.	28.	23.
70.	58.	99.	31.	27.	20.
69.	57.	99.	30.	26.	18.
68.	56.	99.	29.	25.	16.
67.	55.	99.	28.	25.	14.
66.	54.	98.	27.	24.	13.
65.	54.	98.	26.	23.	12.
64.	53.	97.	25.	22.	11.
63.	52.	96.	24.	22.	10.
62.	51.	95.	23.	21.	8.
61.	50.	95.	22.	20.	7.
60.	50.	94.	21.	19.	6.
59.	49.	94.	20.	18.	5.
58.	48.	93.	19.	18.	4.
57.	47.	91.	18.	17.	4.
56.	47.	89.	17.	16.	4.
55.	46.	88.	16.	15.	3.
54.	45.	86.	15.	14.	3.
53.	44.	85.	14.	14.	2.
52.	43.	82.	13.	13.	2.
51.	43.	80.	12.	12.	2.
50.	42.	78.	11.	11.	2.
49.	41.	75.	10.	11.	2.
48.	40.	73.	9.	10.	2.
47.	40.	71.	8.	9.	2.
46.	39.	68.	7.	8.	1.
45.	38.	64.	6.	7.	1.
44.	37.	60.	5.	7.	1.
43.	36.	57.	4.	6.	1.
42.	36.	55.	3.	5.	1.
41.	35.	52.	2.	4.	1.
40.	34.	50.	1.	4.	1.
39.	33.	48.	0.	3.	1.
38.	32.	44.			
37.	32.	39.			

Table B32. MOTOR MECHANICS COMPOSITE (MM): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 11 FEMALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75+	60+	99+	36+	33+	85+
74+	60+	99+	35+	32+	83+
73+	60+	99+	34+	31+	80+
72+	60+	99+	33+	31+	76+
71+	60+	99+	32+	30+	73+
70+	60+	99+	31+	29+	70+
69+	59+	99+	30+	28+	66+
68+	58+	99+	29+	27+	62+
67+	57+	99+	28+	27+	58+
66+	57+	99+	27+	26+	53+
65+	56+	99+	26+	25+	49+
64+	55+	99+	25+	24+	44+
63+	54+	99+	24+	24+	40+
62+	53+	99+	23+	23+	36+
61+	53+	99+	22+	22+	33+
60+	52+	99+			
59+	51+	99+	21+	21+	30+
58+	50+	99+	20+	20+	26+
57+	50+	99+	19+	20+	22+
56+	49+	99+	18+	19+	20+
55+	48+	99+	17+	18+	16+
54+	47+	99+	16+	17+	13+
53+	46+	99+	15+	16+	12+
52+	46+	99+	14+	16+	11+
51+	45+	98+	13+	15+	8+
50+	44+	98+	12+	14+	6+
49+	43+	98+	11+	13+	5+
48+	42+	95+	10+	13+	5+
47+	42+	97+	9+	12+	4+
46+	41+	97+	8+	11+	3+
45+	40+	97+	7+	10+	2+
44+	39+	96+	6+	9+	2+
43+	38+	95+	5+	9+	1+
42+	38+	94+	4+	8+	1+
41+	37+	93+	3+	7+	1+
40+	36+	92+	2+	6+	1+
39+	35+	91+	1+	5+	1+
38+	35+	90+	0+	5+	1+
37+	34+	88+			

Table B33. MOTOR MECHANICS COMPOSITE (MM): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 MALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75+	60+	99+	36+	30+	41+
74+	60+	99+	35+	29+	38+
73+	60+	99+	34+	28+	36+
72+	59+	99+	33+	27+	33+
71+	59+	99+	32+	26+	30+
70+	58+	99+	31+	25+	26+
69+	57+	99+	30+	25+	22+
68+	56+	99+	29+	24+	19+
67+	55+	99+	28+	23+	16+
66+	54+	99+	27+	22+	15+
65+	54+	99+	26+	21+	14+
64+	53+	98+	25+	21+	12+
63+	52+	97+	24+	20+	11+
62+	51+	97+	23+	19+	10+
61+	50+	96+	22+	18+	9+
60+	49+	95+	21+	17+	8+
59+	49+	94+	20+	16+	7+
58+	48+	93+	19+	16+	7+
57+	47+	92+	18+	15+	6+
56+	46+	91+	17+	14+	5+
55+	45+	89+	16+	13+	5+
54+	45+	88+	15+	12+	5+
53+	44+	85+	14+	11+	4+
52+	43+	84+	13+	11+	4+
51+	42+	82+	12+	10+	3+
50+	41+	81+	11+	9+	3+
49+	40+	79+	10+	8+	2+
48+	40+	77+	9+	7+	2+
47+	39+	75+	8+	6+	2+
46+	38+	73+	7+	6+	2+
45+	37+	71+	6+	8+	2+
44+	36+	67+	5+	4+	1+
43+	35+	63+	4+	3+	1+
42+	35+	60+	3+	2+	1+
41+	34+	57+	2+	2+	1+
40+	33+	54+	1+	0+	1+
39+	32+	51+	0+	-0+	1+
38+	31+	49+			
37+	30+	45+			

Table B34. MOTOR MECHANICS COMPOSITE (MM): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADE 12 FEMALES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
76.	60.	99.	36.	32.	85.
74.	59.	99.	35.	31.	84.
73.	59.	99.	34.	30.	82.
72.	58.	99.	33.	29.	79.
71.	57.	99.	32.	29.	75.
70.	56.	99.	31.	28.	73.
69.	56.	99.	30.	27.	72.
68.	55.	99.	29.	27.	69.
67.	54.	99.	28.	26.	65.
66.	54.	99.	27.	25.	62.
65.	53.	99.	26.	24.	57.
64.	52.	99.	25.	24.	52.
63.	51.	99.	24.	23.	47.
62.	51.	99.	23.	22.	43.
61.	50.	99.	22.	21.	38.
60.	49.	99.	21.	21.	33.
59.	48.	99.	20.	20.	28.
58.	48.	99.	19.	19.	25.
57.	47.	99.	18.	19.	23.
56.	46.	99.	17.	18.	21.
55.	45.	99.	16.	17.	19.
54.	45.	99.	15.	16.	16.
53.	44.	99.	14.	16.	14.
52.	43.	99.	13.	15.	13.
51.	43.	99.	12.	14.	11.
50.	42.	99.	11.	13.	10.
49.	41.	99.	10.	13.	8.
48.	40.	99.	9.	12.	7.
47.	40.	98.	8.	11.	6.
46.	39.	98.	7.	11.	6.
45.	38.	97.	6.	10.	5.
44.	37.	97.	5.	9.	4.
43.	37.	96.	4.	8.	4.
42.	36.	95.	3.	8.	4.
41.	35.	94.	2.	7.	3.
40.	35.	92.	1.	6.	2.
39.	34.	91.	0.	6.	1.
38.	33.	90.			
37.	32.	88.			

Table B35. MOTOR MECHANICS COMPOSITE (MM): EQUIPERCENTILES FOR FORMS 2 and 5 - GRADES 10-12, BOTH SEXES

Form 2	Form 5	Percentile	Form 2	Form 5	Percentile
75+	60+	99+	34+	32+	67+
74+	60+	99+	33+	31+	65+
73+	60+	99+	32+	30+	62+
72+	60+	99+	31+	30+	59+
71+	59+	99+	30+	29+	56+
70+	58+	99+	29+	28+	53+
69+	57+	99+	28+	27+	50+
68+	57+	99+	27+	26+	47+
67+	56+	95+	26+	26+	43+
66+	56+	99+	25+	25+	41+
65+	54+	99+	24+	24+	37+
64+	54+	99+	23+	23+	34+
63+	53+	99+	22+	23+	31+
62+	52+	99+	21+	22+	28+
61+	51+	98+	20+	21+	25+
60+	50+	98+	19+	20+	22+
59+	50+	98+	18+	19+	20+
58+	49+	97+	17+	19+	18+
57+	48+	97+	16+	18+	16+
56+	47+	96+	15+	17+	14+
55+	47+	95+	14+	16+	12+
54+	46+	95+	13+	16+	11+
53+	46+	94+	12+	15+	10+
52+	44+	93+	11+	14+	8+
51+	44+	92+	10+	13+	7+
50+	43+	91+	9+	12+	6+
49+	42+	90+	8+	12+	5+
48+	41+	89+	7+	11+	4+
47+	40+	88+	6+	10+	4+
46+	40+	87+	5+	9+	3+
45+	39+	85+	4+	9+	3+
44+	38+	84+	3+	8+	2+
43+	37+	82+	2+	7+	2+
42+	37+	80+	1+	6+	2+
41+	36+	79+	0+	6+	1+
40+	36+	77+		5+	1+
39+	34+	75+		4+	1+
38+	33+	73+			
37+	33+	70+			

APPENDIX C:

Participating U.S. High Schools

APPENDIX C

PARTICIPATING U.S. HIGH SCHOOLS
RANKED BY SIZE OF ENROLLMENT

NAME	STATE	ENROLLMENT	STUDENTS TESTED*
Philadelphia: Olney H.S.	PA	4,472	26
Miami: Carol City H.S.	FL	3,947	59
Pittsburgh: North Hills H.S.	PA	3,276	47
Trenton: Central H.S.	NJ	3,001	21
Detroit: Ford H.S.	MI	2,937	43
Los Angeles: Belmont H.S.	CA	2,915	37
Denver: Lincoln H.S.	CO	2,722	62
Los Angeles: Alexander Hamilton H.S.	CA	2,395	41
Detroit: M. L. King H.S.	MI	2,237	38
Miami: Northwestern H.S.	FL	2,141	54
Washington, D.C.: Eastern H.S.	DC	2,129	84
El Toro H.S.	CA	1,890	91
Bear Creek H.S.	CO	1,875	11
Philadelphia: Mastbaum Voc. Tech.	PA	1,658	25
Philadelphia: Kensington H.S.	PA	1,656	29
Farmington H.S.	MI	1,636	93
Bartlett H.S.	TN	1,629	238
Pawtucket H.S.	RI	1,445	29
Kansas City: Paseo H.S.	MO	1,409	112
Kansas City: Manuel H.S.	MO	1,388	118
Kansas City: Lincoln H.S.	MO	1,316	150
Washington, D.C.: Springart H.S.	DC	1,192	23
Boston H.S.	MA	636	98
San Antonio: South Side H.S.	TX	600	119
San Antonio: St. Francis Academy	TX	278	174
San Antonio: SANYO	TX	172	76
LaVernia H.S.	TX	160	99
Greater Miami Academy	FL	85	55

*Numbers listed are for those completing both ASVAB Form 2 and Form 5 tests.

APPENDIX D:

Short Description of Tests

SHORT DESCRIPTIONS OF TESTS

ASVAB FORM 2

TESTS IN THE ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB)

1. Coding Speed test (CS). In this test there is a key and 100 items. The key is a group of words with a code number for each word. Each item presents one word for which the examinee indicates the code number.

2. Word Knowledge (WK). Each item requires the examinee to select the correct synonym for a specific word.

3. Arithmetic Reasoning (AR). Each item is a reasoning problem involving application of the arithmetic process.

4. Tool Knowledge (TK). Each item presents five drawings of various tools or shop equipment. The examinee indicates which of the four alternative drawings goes best with the lead drawing.

5. Space Perception (SP). Each item consists of five drawings: a pattern and four boxes. The question to be answered is which one of the boxes can be made by folding the pattern.

6. Automotive Information (AI). Each item asks a question about the identification or operation of automobile parts.

7. Shop Information (SI). This test has questions about shop practices and the use of tools. Many of the items contain drawings.

8. Mechanical Comprehension (MC). Each item includes a drawing, or drawings, illustrating some physical principle and a question.

9. Electronic Information (EI). This test has questions about elementary principles of electricity and about electrical/electronic devices, drawings, and equipment.

12 SUB-TESTS IN ASVAB FORM 5

1. Arithmetic Reasoning (AR)
   Multiple choice questions about everyday arithmetic problems and reasoning processes, including prices, salaries, premiums, ages and schoolwork.

2. Electronics Information (EI)
   Multiple choice questions about elementary principles of electricity and about electrical/electronic devices, drawings and equipment used in everyday life.

3. Space Perception (SP)
   Ability test requiring the 3 dimension potential examination of five drawings: a pattern and four boxes. The question to be answered is which one of the boxes can be made by folding the pattern.

4. Automotive Information (AI)
   Multiple choice questions about parts of automobiles, their operation, and when repairs are needed. Requires some understanding of technical terms and names of components.

5. Mechanical Comprehension (MC)
   Multiple choice items, mostly including diagrams, which serve to illustrate the physical principles by which well-known devices and structures operate.

6. Shop Information (SI)
   Multiple choice items about tools, repairs, maintenance and common workshop tasks.

7. Word Knowledge (WK)
   Multiple choice questions requiring the selection of words having the same meaning and sense as a given single noun, verb, adjective or adverb.

8. Attention to Detail (AD)
   Speed test of ability to find an important detail in 30 similar letter layouts.

9. Numerical Operations (NO)
   Speed and accuracy test using 50 simple multiple choice questions in arithmetic.

10. Mathematics Knowledge (MK)
    Multiple choice questions on general mathematics problems including simple algegra and geometry.

12 SUB-TESTS IN ASVAB FORM 5 (Cont.)

11. Science Knowledge (SK)
    Multiple choice items about simple biology, chemistry, physics, physiology and space science.

12. General Information (GI)
    Multiple choice questions on a variety of geographic, sports, military, and common knowledge topics.

☆U.S. GOVERNMENT PRINTING OFFICE: 1976- 771-057/4